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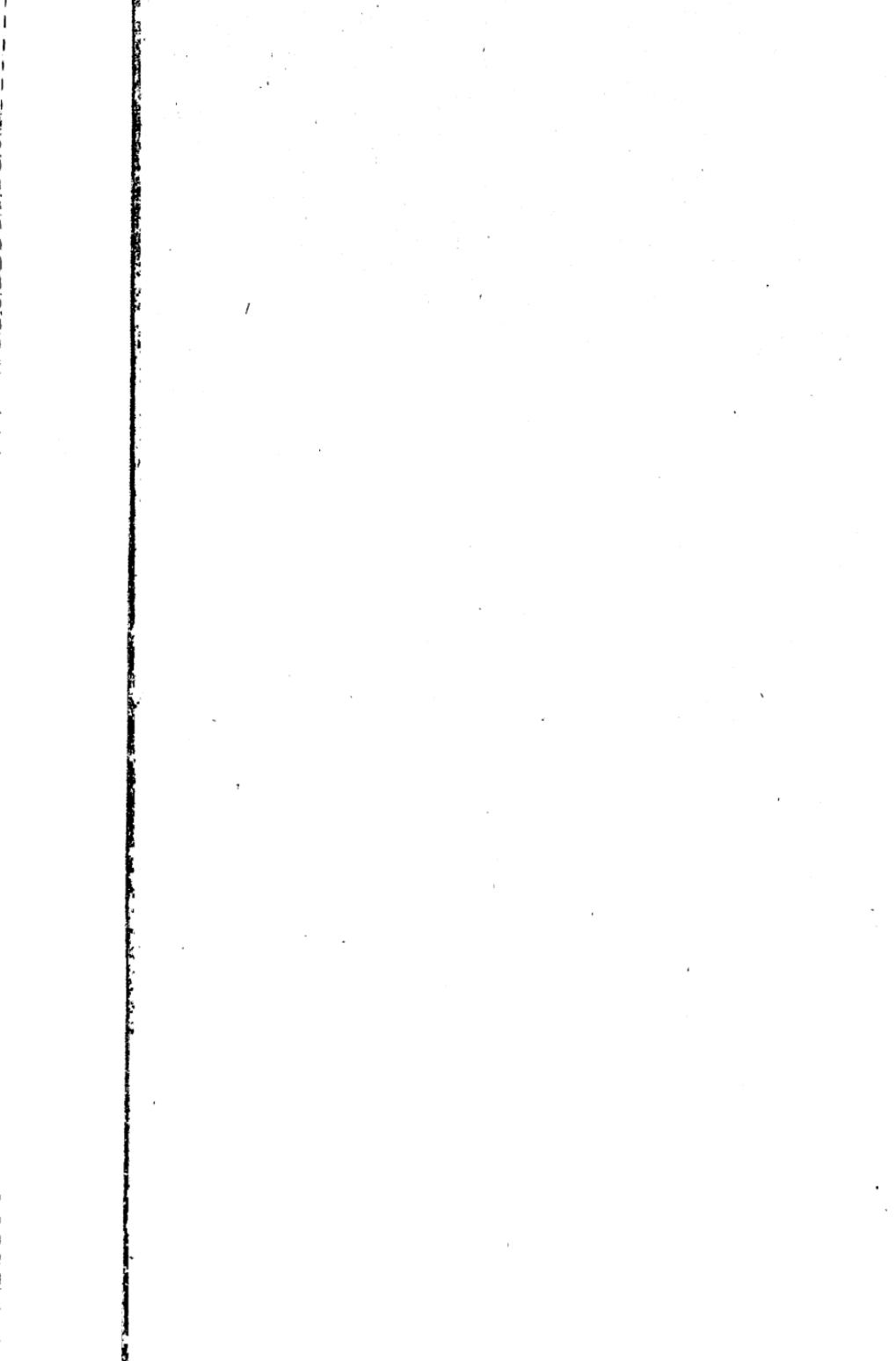
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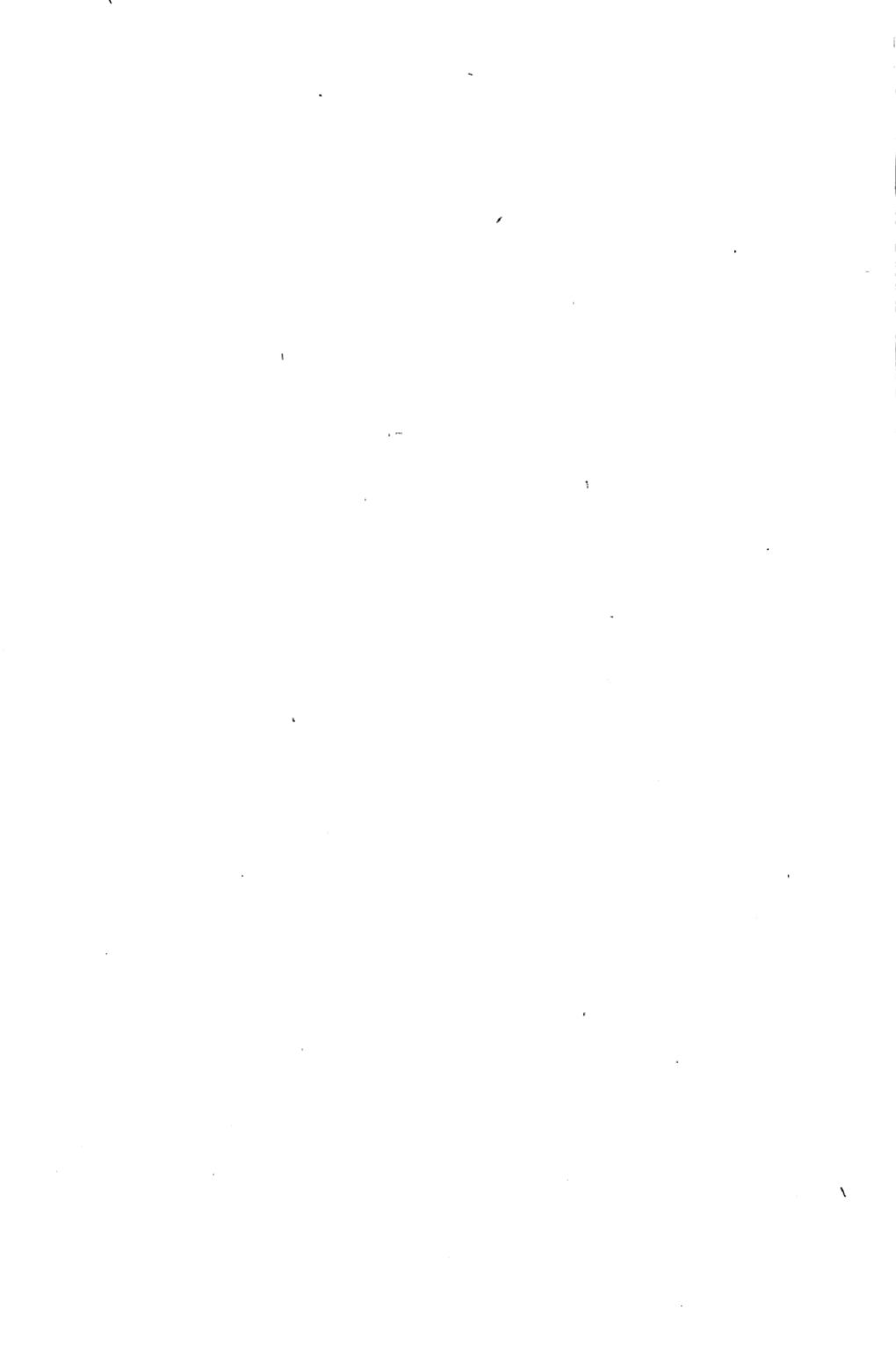


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STATE OF
CALIFORNIA

A Better Day's Work

190 W. Wall
Accounting Department



A typical Accounting Department, where it is realized that the time of every man
who handles figures is worth money

A Better Day's Work

at a Less Cost of
Time, Work, and Worry
to the Man at
the Desk

Fourth Edition
In Three Parts: Illustrated



Burroughs Adding Machine Company
Detroit, Michigan, U. S. A.

MCMX.

HF 84
B23

"The man who undertakes to master his business from books only, will never make a practical merchant, but on the other hand the merchant who ignores whatever others have written on the subject cannot expect to be brilliantly successful."

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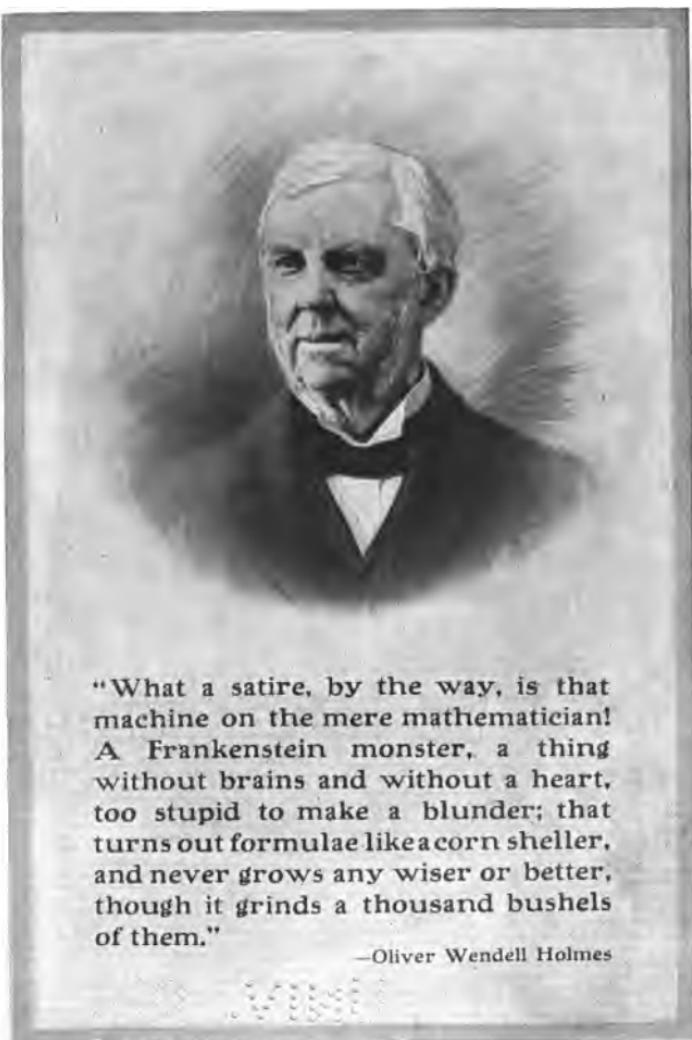
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Dedicated to the Man
at the Desk, to whom the
Burroughs has always
meant a Better Day's Work
at a less cost of Time,
Work and Worry.

UNION OF
CALIFORNIA

254078



"What a satire, by the way, is that machine on the mere mathematician! A Frankenstein monster, a thing without brains and without a heart, too stupid to make a blunder; that turns out formulae like a corn sheller, and never grows any wiser or better, though it grinds a thousand bushels of them."

—Oliver Wendell Holmes

Preface

IN presenting this edition, the fourth, of "A Better Day's Work," we wish to express our gratification at the cordial reception given this slight effort to reflect a part of the work done by the Burroughs Adding and Listing Machines in taking care of the accounting systems of the world.

* * *

They say advertising is one of the greatest educational forces. That it means rousing the spirit of inquiry and that the most sensible way to arouse this spirit in any human being, is to tell him something which he does not know and which it will be clearly to his advantage to know. The authors of this little book have been using the machine it celebrates for many years. The Burrooughs has so increased the sum of human comfort and happiness in offices where it has been given the chance, that it is an act in line with brotherly good feeling to pass the word along—that the Burroughs is a good thing to have about the office—hence this book.

* * *

Acknowledgment is here made to the many thousands of Burroughs users from whose experience and cheerful testimony these few practical suggestions have been culled.

BURROUGHS ADDING MACHINE COMPANY



ALLEGORY

"The bookkeeper of those days was not chained to a desk."

LIBRARY OF The Story of a Great Idea

How it Grew into a Golden Realization

CHAPTER I.

The Stone Age Accountant

There is something in numerals, in the process of calculation, extremely frosty and petrifying to a man.—*W. M. Baker, "New Timothy."*

LONG before trial balances, or even debit and credit were thought of, men were seeking some escape from the drudgery of casting up figures “in their heads,” and for century after century, through era after era of constantly shifting civilization, the search for a mechanical brain has gone on.

At different times the problem has occupied the minds of the greatest scholars of every race—Egyptian, Assyrian, Chaldean, Greek, Roman, Chinese, down through the days of the prophets, the birth of the Christian era, the Middle Ages—until at the middle of the last century, the whole thing had become a joke and the end of all this investigation and patient study seemed no nearer than in the beginning.

These ages of striving for a single idea indicate merely the tremendous need that has always existed for a device that would relieve the human brain of the menial labor of calculation.

Addition alone, which constitutes about nine-tenths of all the labor of modern bookkeeping, is as distasteful to the mind as the task of digging ditches in soft soil, which tumbles back again as fast as it is thrown out. Just so with the addition of long columns of figures. You no sooner reach the foot of the column after your mental travail and labor, than you have to start all over and climb to the top again, for fear of an unwitting error always lying in wait for you in an unguarded moment.

The Even before mankind knew enough to put its figures
Story in columns, this difficulty was met with. Our remote
of a ancestors, performing simple calculations by placing
Great shells and pebbles on the ground to represent numerals,
Idea found it hard to get the "right answer."

In the neolithic age, before rudimentary tails had gone out of fashion, and when all calculations were recorded by lines scratched on the face of the rocks, the troublesome additions must have been even worse. To erase an error made on solid granite with a flint chisel was no small matter.

The Certainly the stone-age man had his troubles in striking a balance of his business, even though his problems were not complicated by such things as bills payable or "two per cent ten days." We can imagine him scrambling up hill to consult his "A" ledger at the summit, then down into a ravine, carrying his stone hammer, to debit merchandise and credit cash in the journal. The bookkeeper of those days was not "chained to a desk."

Enormous Later on, his work was somewhat simplified by the introduction of tables of stone, hewn from the solid rock and set up in place wherever needed. Stationery bills must have been enormous, however, for the man of large affairs would naturally require a whole stone quarry to keep his office force in scratch pads alone. And when the owner of the outfit broke his "pencil" it required a whole day of the hardest kind of work to sharpen it again.

It is not unlikely that when Noah built the Ark he had to chisel all his calculations for the plan of that noble vessel on tablets of stone—and how he must have sighed for an adding machine that would list and add his dimensions in cubits, automatically converting the fractions into whole cubits.

Such were man's everyday problems in the ages before the Deluge, when the human brain revolved on the lowest speed and was incapable of devising even the most primitive "business helps."

CHAPTER II.

First Portable Adding Device, Compared With Some of the Present Day

"The supreme mark of wisdom is the willingness
to replace an excellent thing by a better one."

AT a very early period in our evolution the process of finger-reckoning was developed, which makes it certain that the first portable adding machine consisted of "four little fingers and a thumb," one hand being required to furnish the units of calculation while the other was busy as a counter. Because of this limitation, man's sum of things was at first limited to five; since it was obvious that, having only five digits on his left hand, while he had to use the right to tell them off, there was no way to reckon so many as a half dozen.

This lack of imagination is not so entirely prehistoric as it might seem, for present-day explorers have repeatedly told of existing African tribes which know no numerals beyond five and have no words to express a higher number.*

The fingers-and-thumb adding machine was constantly improved to meet the growing needs of the race, and one important step in its development was the adoption of both hands for units instead of one. Historians have pointed out, in this connection, that man's possession of ten fingers undoubtedly accounts for ten having been the base of many of the earlier systems of numerals, which gave us our present decimal system.†

Ten
Fingers
Basis
of Deci-
mal
System

Some races took advantage of the possession of toes, also, to double the capacity of their "ready reckoners." This gave rise to number systems based, in some cases, on twenty. This was true of the Mexicans, whose primitive system was based on multiples of twenty, instead of ten.‡

*History of Accounting, Richard Brown.

†Geschichte der Elementar-Mathematik, Carl Fink.

‡Ibid.



"The first portable adding machine consisted of 'four little fingers and a thumb.'"

An interesting account has been given of certain South African tribes which require three persons to furnish the units of any considerable calculation. By means of the extended hands of this multi-fingered counting device, the operator could work out sums involving not more than three places of figures by a process somewhat as follows: The first man represented units, the second tens, and the third hundreds. Beginning with the little finger of the left hand, each finger represented a different value. The first man counted continuously, raising his fingers successively for each unit, the next man automatically "carried" on the tens by raising the proper fingers, while the hundreds were carried over on to the fingers of the third man. In this way a totaling capacity of 999 was obtained.*

It must not be thought that finger-reckoning represented merely a crude method of counting. It was highly developed by the Greeks, and in its most elaborate forms was taught by Aristophanes as early as 420 B. C. An account of the manner in which it was used has been handed down by one Nicholas Rhabda, of Smyrna, who states that calculations could be carried into hundreds of thousands.†

Having progressed to the point where he could make simple calculations without the manual labor of cutting them first on stone, man was still far from a solution of his mathematical problems. The process of mental addition, subtraction and such elementary multiplication as he required sorely taxed his somewhat sluggish wits. Moreover, his finger-reckoning gave him answers without any record of the various sums which they contained—therefore no way of "checking back" on the correctness of his solutions. This, of course, obliged him to perform each calculation over and over again for lack of any positive way of proving his work.

The Story
of a
Great Idea

Finger-
account-
ing

Lack of
Record
Meant
Duplica-
tion of
Work

*Vorlesungen über Geschichte der Mathematik M. Cantor.

†History of Accounting.



"Adds up the tariff for mangling your shirts on a 'swanpan' very like the original abacus."

CHAPTER III.

Beginning of Mathematics and Commercial Bookkeeping

"In every branch of science our knowledge increases
as the power of measurement becomes improved."

IT seems generally admitted that the Egyptians were the first to develop really efficient systems of numbers and of their mathematical application. In one of the tombs near the pyramids of Gizeh have been found hieroglyphic numerals of a very ancient period, in which 1 is represented by a vertical line, 10 by a horseshoe, 100 by a short spiral, 10,000 by a pointing finger, 100,000 by a frog, and 1,000,000 by a man in an attitude of astonishment.*

Egyptians
Used
Complex
Numbers

The arrangement of these Egyptian number signs shows a complex numerical system, developed to quite a considerable extent; but the present writer's researches lead him to believe that the enterprising citizens of Babylon at that period were not far behind.

Early Babylonian cuneiform inscriptions, made in 2200 or so, B. C., show that they wrote their numbers in order from left to right, as we do today, while the conservative Egyptians and other peoples were still proceeding backward, or following the Chinese in their stubborn way of working up and down. They had a decimal system too, those Babylonians, at the time we mention, and about all they needed to make it complete was the cipher (0) or zero, which was not known until four or five hundred years after Christ, when it came into use among the Hindus, together with our nine digits, which we wrongfully credit to the Arabs, who merely borrowed them from the Hindu.†

Babylonians
Used
Decimal System

When Babylon was at the height of its notoriety as the most "wide-open" town in the world, business reached

*Fink.

†Cantor.

The Story of a Great Idea a plane of activity and importance which marked a new epoch in commercial history. Even as far back as the administration of King Hammurabi—2285 to 2242 B.C.—there were public enactments governing commercial transactions and accounts, as proved by the monument exhumed at Susa, on which is inscribed the full text of these ancient laws relating to buying and selling, as well as the relations between the merchant and his agent.* It is difficult to realize the extreme antiquity of these inscriptions until we are told that Hammurabi lived and ruled over Babylon in the days of the Old Testament patriarch, Abraham.†

Babylonians Used Clay Tablets The records of Babylonian business houses dated only a century or two after Hammurabi are still in existence, and they show that all matters of record in those days were made with a sharp stylus on chunks of soft clay, properly moistened to give a good writing surface. They didn't worry about the permanency of their paper or the indelible qualities of the ink they used then. Whether they made out an insurance policy or a mere "dunning" letter, they wrote it deep in the clay, and then baked it into a properly hardened brick—and there they are, in the British Museum, today, as good as the day they were made, long before Pharaoh was drowned in chasing the children of Israel across the Red Sea.

Babylonians Used First Adding Machine Having developed their business to some extent, we find that the Babylonians, even in that early day, had trouble in keeping their accounts straight by mental processes of calculation, and at this time the original adding machine was invented. As used by the Babylonians, it was a crude reckoning board, pebbles being shifted about on a ruled surface to represent different values.

Excavations made at Sippara, in Chaldea, have brought to light the original loose-leaf ledger, and give

*John's Translation.

†History of Accounting.

us a clear idea of what a Chaldean merchant's office looked like at a period approximating the year 1000 B. C.

Around the walls of this office were rows of ^{The Story of a Great Idea} shelves. The shelves bore rows of wide-mouthed earthen jars, closed with tile and sealed with daubs of pitch. Each of these jars was supposedly an individual ledger account, and the entries consisted of baked-clay tablets on which the various postings were inscribed in cuneiform characters.* Additional entries pertaining to a particular account were made by inscribing them on a smaller tablet and attaching this to the original entry with a straw and some primitive sealing wax.†

An improvement on the original reckoning board, under the name of the abax, is first found among the Greeks three centuries before Christ. It involved the use of pebbles laid on cross lines according to a certain well defined system of place-values.

Greeks Make Abacus

Later we have the abacus, arranged by the Romans.‡ This was at first a "dustboard," the surface being strewn with fine sand, which was renewed at each operation. Parallel lines were drawn in the dust with the fingers, and values were represented by finger marks at certain points.

Roman "Dust-board"

This method of doing sums, while simple and inexpensive, was open to certain objections. Not the least of these was the fact that the "dustboard" could scarcely be trusted on a windy day out of doors, as a playful breeze might whisk away the result of a whole afternoon's hard work. Nevertheless, it continued in use for a considerable period, being succeeded by a board made of metal provided with vertical grooves in which horizontal strips representing cross marks were shifted from one position to another.

Thus we see that the abacus is another of the inventions for which the Chinese have wantonly "hogged"

*London Daily Chronicle—Dahl.

†The jars and tablets are in the British Museum.

‡Pink.

The all the credit. There is no doubt, though, that the Celestial ^{of a} Story ^{Idea} established valuable improvements to the device while the haughty Romans were still twiddling their finger tips around in the dust. As adapted by the Chinese, the principle was that of an open frame strung with horizontal wires, spaced at equal distances. These were crossed by a vertical wire dividing each into two unequal parts. On the short part two perforated pebbles were strung with five pebbles on each of the longer wires. John Chinaman today adds up the tariff for mangling your shirts on a "swanpan" very little different from the old original abacus.

China, Japan and Russia Disputing priority for this improvement with the Chinese was a Japanese counting-board called "san bong," so similar in arrangement as to arouse suspicion of a "steal" on one side or the other. Perhaps the Tartar invasion is responsible for the fact that a little later we find still another very similar device in use by the Russians, who called it a "stochty."

Between these three there might have been room for a highly interesting suit for infringement; but there were no patent attorneys to wrangle over the matter, because, in turn, there was no capital invested in the adding-machine business to make it worth their while.

The utmost capacity of these ancient "adders" was small. (There were no "swollen fortunes," calling for 15 rows of keys, with a totaling capacity of 999,999,999,- 999,999, as at present.)

But we anticipate. It is still several centuries to the days of Babbage and William Seward Burroughs.

CHAPTER IV.

Development of Modern Methods in Europe— Origin of the “Carbon Copy”

“What is the Initiative? I'll tell you: It is doing the right thing without being told.” That applies to peoples as well as individuals.

To those interested in the development of modern office practice it will be interesting to note that one of our most useful office devices—the “carbon copy,” originated in England, (or possibly in Germany) about the tenth century.

Since writing was then an art known only to the select few, most commercial transactions were recorded by means of sticks in which notches were cut to represent the amount of the transaction. Thus the merchant buying a bill of coats-of-mail or fancy chain vests from his armorer or jobber, would acknowledge the indebtedness by a note of hand in the form of a piece of two-by-four, notched to the amount of the invoice.

Now, it appears that, even in those days, there were clerks who occasionally had difficulty in distinguishing between the boss's money and their own. Thus it happened that customers frequently complained of the way the notches in their sticks seemed to multiply, and the trouble was often traced to employes who would “raise” the face of some of the bills as they fell due by cutting an extra notch here and there, making the collections and putting the difference in their pockets.

Thus, as ever, necessity labored and brought forth the carbon copy idea. It was simple enough. The stick, being notched across one side and inscribed with the date and names of the parties to the transaction, was split in two with an axe. One-half, called the “stock,” was given to the creditor, while the other, or “counterstock” was retained by the debtor.

“Car-
bon
Copy”
First
Used

Origin
of Copy
of
Records



"Would acknowledge the indebtedness by a note of hand in the form of a piece of
two-by-four."

When William the Conqueror took possession of the throne, the tally was officially adopted for recording tax payments and other crown revenues, as well as for certificates of royal indebtedness to citizens making loans to the government.

The basement of the average mercantile establishment at this period must have resembled a lumber yard, while the government itself, being obliged to keep tallies with nearly all of its subjects, accumulated a wood pile that grew out of all bounds.

In 1785 the Government abandoned the tally system in the treasury department, and in 1835 the "legal tender" timber was officially destroyed in a huge bon-fire that, incidentally, consumed the Houses of Parliament.

Very little progress was made in bookkeeping methods during these medieval times. Commercial accounts consisted simply of narrative entries on sheets of parchment, with no system or method of comparison for accuracy. Records were made in Latin or in the hybrid Norman-French, with Roman numerals, which did not lend themselves to ease of calculation, since it was necessary, for example, to subtract ten from fifty and add five before one knew that XLV stood for 45—and this discouraged attempts at mechanical devices or short cuts. Presumably, the bookkeeper at this period was a profound scholar and a man of parts to be regarded with awe and deep respect.

The Italians seem to have developed the art of accounting, and were the first to use the Arabic numeral and to state their accounts in a systematic form. Leaves from the books of a Florentine banker for the year 1211 have been preserved, and show only a detached series of notations—the best examples of that time; but by 1340 the merchants of Genoa had progressed to the point of employing double entry, which is the first record of accounting developed to a point suggesting our methods of

The Story
of a
Great
Idea

Ancient
Book-
keeper a
Scholar

Falli-
bility of
Ancient
Book-
keeping

The today.* As late as the end of the fourteenth century Story this development had not reached the stage of a general of a Great comparison of debits and credits, although a crude form Idea of trial balance has been found in the books of a Genoese banker of that time. The first known work on bookkeeping was published in Venice in 1495, by Luca Paciolo, and the use of three books—Memorial, or day book; Journal; and Quaterno, or Ledger, are suggested. Even with all their superiority, however, it is pointed out by latter-day historians that the Italians were weak in the details of their bookkeeping systems, as many of these ancient books of account are found to be out of balance by considerable amounts, showing that the accountant who nods over his work is not confined to this generation.†

Incep-
tion of
Modem
Book-
keeping

Roman numerals continued in use in England until 1673, and little progress in forms of accounting was made up to this year, which saw Arabic numerals come into use, together with the adoption of a regular column set apart for amounts. Prior to this, amounts had been jumbled in with the descriptive wording comprising the entries. In 1720 the practice of carrying footings forward from page to page was first adopted, and from this time the modern art of bookkeeping, as we know it, has developed.

“Na-
pier’s
Bones”

Early in the Seventeenth century Naples produced the first actual mechanical aid to calculation of which we can find any record. This was the Napier’s rod, or Napier’s “bones,” consisting of strips of bone bearing numbers on the edges in such a way that they could be brought into various fixed combinations and thus aid in many calculations. Napier’s invention was the direct forerunner of the wonderful slide rule with all its variations as it is used by draftsmen, engineers, surveyors, and craftsmen of many sorts today.

In 1642 a young Frenchman, Blaise Pascal, worked out the principle of dials bearing figures on their peripheries which could be revolved and thus give endless combinations as various numbers were brought together.

*History of Accounting.

†Sieveking—Aus Venetianischen Handelsbuchern.

CHAPTER V.

The Labors of Charles Babbage and His
Contemporaries

"Accuracy is the twin brother of honesty;
inaccuracy of dishonesty."

THE first organized attempt to produce a calculating machine that would really supplement the work of the human brain was due to the abstruse and greatly extended computations required for astronomical and geographical tables, and was begun by Charles Babbage about 1823, under a subsidy from the British government. Babbage was a professor of mathematics at Cambridge, and one of the foremost mathematicians of his day. About 1820 he submitted to members of the Royal Society his crude model of what he called "an engine of differences," which was to perform the most extended computations required in the study of astronomy and navigation, *and to produce a record of its work stamped on plates of copper or other suitable material.* For suggesting the latter feature, Babbage is entitled to all the credit which he has received, since he was the first to conceive a device that fulfilled the prime condition of performing its calculation and recording it, together with the result, without affording possibility of human error in transcription.

First
Attempt
to Make
Machine

There has never been any particular difficulty in accomplishing mere mechanical calculation since the days of Pascal. The automatic counter applied to printing presses, the cyclometer on a bicycle, the fare register in a street car—all adapted from the Pascal device mentioned in the previous chapter—are *calculators*, and date back to the seventeenth century. In order to be of real service in relieving the mind and supplementing its work, however, the machine must leave a permanent record to

Problem
was to
Get
Record



"The novelist-statesman pooh-poohed the idea."

show what figures entered into the calculation, and in what order. This is what Charles Babbage really did—or at least suggested the way in which it might be done.

For several years Babbage labored incessantly in the work-shops which he had built in the grounds of his home near London, but from the first the most stupendous obstacles were met, and the work came to a halt in 1833 with the engine only half completed.

Over £17,000 of government money had now been spent, and, so Babbage claimed, nearly as much more from his own private resources. He went to Lord Derby, who had succeeded Peel as Premier, and proposed that a new appropriation be made to proceed with his work.

Derby took the matter up with Disraeli, then chancellor of the Exchequer, but the novelist-statesman pooh-poohed the idea, saying that since so much money had been spent with no apparent result, it was impossible to see the end of the possible expenditure, and, in short, "turned it down flat."

Babbage's means had all gone into his invention and the net result of the whole business was the half-finished engine of differences, which the government offered to present to Babbage, but which he refused. It was then turned over to the Museum of King's College, where it still remains, a ponderous mass of mechanism as big as a barrel, mutely testifying to the first real step in the development of the practical calculating machine.

An important device developed in 1850 was the calculating machine of Thomas de Colmar, an Alsatian. Colmar's machine was operated by means of gear wheels and pinions, actuated by a crank, and was the inspiration for many of the machines used by statisticians and craftsmen for extended calculations in many lines today, most of these machines being imported from Germany and Switzerland. They afford no record of their work, and have no uses outside of calculations in higher mathematics.

The Story
of a Great Idea

End of Bab-
age's Efforts

An Im-
portant Step Forward



W. F. Burroughs

Born January 28, 1853; died September 14, 1898.
Inventor of the Burroughs Adding and Listing Machines

CHAPTER VI.

Wonderful Story of William Seward Burroughs,
Who Succeeded Where Scientists for
Centuries had Failed

"The adding machine that enables us to keep account of the world's work today was the invention and life work of William Seward Burroughs, a native of New York State, who loved the machine better than he did the dollar. It was never gotten up simply to sell, but first of all to do its work perfectly, then it was made to last indefinitely—and then, of course, its sale couldn't be stopped."—*Gooch*.

FOllowing the work of Babbage and his contemporaries, a host of experimenters sprang up all over Europe, and considerable progress was made toward devising mechanical means of calculation for scientific purposes. But the work-ridden bookkeeper, whose troubles were infinite, and his number legion as compared with a handful of astronomers and savants, seems to have been completely disregarded by all the workers in this field up to the time of William Seward Burroughs, who eventually found the "right answer."

Burroughs was not a scientist. He was born in Rochester, N. Y., January 28, 1858, of parents in humble circumstances, and his early education was merely elementary. He had no knowledge of astronomy or higher mathematics. His mathematics were confined to a long string of debits on one side of the red line, and credits on the other—and why in the world don't they balance? Burroughs was a bank clerk.

So, when he became possessed of the desire to build a set of "mechanical brains," as hundreds of other men had desired before him, he conceived one that would be a benefit to all humanity, born out of his own sore needs and trials; out of long nights spent in poring over columns of dancing figures when he should have been in bed; out of impaired eyesight and once robust health lost in the close confinement of the banking house and the strain of overwork.

Bur-
roughs'
Idea

Practical

He
Aimed to
relieve
the
Book-
keeper

The Story of a Great Idea Just as the principle of the steam engine waited through long centuries for a Watt to discover it; just as electricity flashed from the clouds and crackled at the ends of men's fingers ever since the world began until the coming of a nineteenth-century wizard to put a harness on it—so the human need of an adding machine waited through hundreds of years for the psychological moment when a broken down bank clerk brimming over with the need for such a device should be combined with the mechanical genius necessary to work out the tremendous problems involved.

Burroughs was, of course, a mechanical genius—one of the greatest the world has ever known—and this genius was born with him just as much as his eyes and his ears. Nevertheless, he never realized this until after he was 25 years old when, at his father's desire, he entered a bank in Auburn, N. Y., and here he formed the resolve that determined his real life work and was responsible for the writing of this little history.

[Bulk of Bank Accounting Was Addition] In the bank young Burroughs learned that nine-tenths of the work that is done by gentlemen who toil indoors at nice, clean occupations has to do with figures, and that nine-tenths of the commercial side of figures is addition. Also, that the human brain is but an imperfect tool, and incapable of sustained effort without accident.

He kept account of all the currency that came into the bank, adding it up cent by cent and dollar by dollar. He added up long columns representing checks drawn by depositors against their accounts and by depositors in other banks against *their* accounts, which passed through his institution for collection. He added up the same amounts over and over again at different times and under different names, and always there was a debit side and a credit side, and what he added up on one side he had to add all over again, in a different form, on the other side—and both sides had to come out the same. If they

refused to do this, it meant long hours at night, when other folk were in bed—and all, perhaps, for a trifling error of one figure hidden away somewhere in the ambush of a long column, ready to jump out at him when he tried for the balance.

Finally, he came to analyze this matter, and discovered that about half his time was occupied in trying to guard against error, and half of *the other half* in hunting for errors that *all* his precautions had not availed to prevent. The productive *one-quarter* of his time constituted his day's work; the other three-quarters was wasted.

Perhaps Burroughs' constitution was one of those which are naturally unfitted for a sedentary life; perhaps he worried too much over his work. At any rate, his health gave away under the strain, and physicians told him that his only chance for life lay in getting away from the confinement and monotonous grind of clerical work and into some occupation of an entirely different nature.

Burroughs left the bank with his idea full formed in his mind—at least he knew the work his machine would have to do, and, in a general way, how it must be done—and thereafter he never rested, through long years of intense, unceasing endeavor, through hardship and poverty, the discouragement and disbelief of all the world, through constantly failing health and strength, until at last he was able to show the world a completed model of his “registering accountant,” the first practical mechanism ever devised to supplement the work of the human brain in the same way that the steam engine and the electrical dynamo supplement the work of human hands and infinitely multiply their capacity.

From Auburn, Burroughs went directly to St. Louis, and secured employment in a machine shop where a great deal of miscellaneous work was done, giving him the widest opportunity to become acquainted with all

The
Story
of a
Great
Idea

Leaves
Bank
With
Plan to
Perfect
Device



"In hunting for errors that all his precautions had not availed to prevent."

sides of the craft. At home, by lamplight, he worked far into the nights, surrounded by books and his own rough pencil sketches, forming the first rude outlines of his adding machine.

The various elements that go to make up this result from a mechanical standpoint are complex almost beyond belief, and the course of Burroughs' progress was strewn with countless obstacles, each one of which seemed to indicate the bitter end of all his hopes. But he never gave up.

Once, at a crucial point in the work, when it seemed as though all the laws of nature and the very elements of mechanics were arrayed against him, he remained alone with his work all day Monday, Monday night, Tuesday, and Tuesday night—48 hours altogether—without a wink of sleep or a moment's rest. He emerged with the face of a ghost, but he was not tired or hungry or sleepy—he had won.

One who has studied Burroughs' work and knows it well has said that: "Accuracy is truth filed to a sharp point, and this was the tool with which Burroughs worked. It was the foundation of his machine, as it was the leading impulse of Burroughs himself. No ordinary materials were good enough for his creation. His drawings were made on metal plates that could not stretch or shrink by the fraction of a hair. He worked with hardened tools ground to a point, and when he struck a center or drew a line he did it under a microscope. His drawings are today a marvel of accuracy, and remain a monument to Burroughs' love of truth with the 'nubs' knocked off."*

The Story of a Great Idea

Burroughs' Primary Tool was Accuracy

* "A Little Walk with William Seward Burroughs"—H. C. Peters.



"Joseph Boyer had met too many inventors, full of glowing predictions, to accept any of these predictions at par."

CHAPTER VII.

Burroughs' Invention Attains the Dignity of a Commercial Basis

"Do something—Methuselah lived to be 900 years old, but little else about him ever got into print."

BURROUGHS' first step toward giving the fruits of his labors to the world was taken one day in 1884, when he was sent to examine some mechanism in a large St. Louis dry goods house. Here he became engaged in conversation with a member of the firm who seemed interested in the mechanical skill which he displayed.

To this man Burroughs told something of his idea and his belief that he would eventually perfect it if he could have money for the endless experiments that were required. This man interested others in the dry goods house, and secured \$700, which was paid to Burroughs in exchange for fourteen shares of stock in the company which he proposed to organize.

The \$700, of course, was soon spent, but it was the turning point in the development of the invention, for the possession of a sum of real money led Burroughs to the machine shop conducted at that time by Joseph Boyer on Dickson street, St. Louis. Mr. Boyer's business consisted mainly of jobbing work of all kinds, including experimental work for inventors, and to him Burroughs made a proposition for the hire of bench room, with the use of such machinery and equipment as he required, together with three or four of Mr. Boyer's workmen—all to be paid for at a fixed price.

The work at the Boyer shop progressed quite rapidly, and Burroughs managed in one way or another to scrape up enough money to keep the project going. He no longer had to work out each thought with his own hands in solid steel and brass. Instead, he went home every night with his head full of new ideas, and came down every morning with these ideas firmly fixed on plates of copper or coated

Enter-
Mr.
Boyer

New
Ideas

The zinc, from which his little band of assistants created Story of a the parts he desired.

Great Idea Every dollar that Burroughs could get together by the sale of stock in his proposed company to friends and acquaintances was promptly spent in endless experiments, until it seemed that there was no bottom to the hole, and many who had invested wished heartily that they had never seen or heard of Burroughs.

But all the time Burroughs was getting ahead with his work, and hardly a week passed without some problem solved, some important feature of the machine developed. His progress during these dark days is best shown by the successive models which he built, some of which are still in existence. The first one ever exhibited publicly was built in 1884, and formed the basis of his fundamental patent, issued in 1888, being the first ever granted for a key-set recording and adding machine. This model is shown in the engraving on page 38. While not a success, it contained the solution of some of the inventor's hardest problems, and some of its essential features—for example the keyboard and the adding mechanism—remain practically unchanged in the Burroughs machine today, after twenty-five years of constant development and improvement.

Burroughs builded for the ages. Having little thought of personal gain, and no aim except to produce the finest machine that could be built, he brought forth a triumph of mechanical skill—a veritable masterpiece in metal, which has often been copied, but never equaled or even approached.

Pivotal Principle the Key-note The foundation stone of Burroughs' machine was the Pivotal Principle which he built into this and all of his later machines, and which the best mechanical engineers still declare to be the finest construction ever devised for the purpose. He had experimented with ordinary sliding forms of construction, and found that the friction between

two sliding metal surfaces tended to destroy the absolute accuracy which he sought.

Another stone which Burroughs put into his foundation at the start was the principle that the actual operation of the machine should be independent of human agency to the greatest possible extent. For this reason, we find that even in his earliest models he arranged that the keys should merely *set up* the mechanism in preparation for the actual operation of printing and adding, which was accomplished by pulling a lever. It is evident that Burroughs had in mind the typewritist lady with her too-busy eraser, and he decided at the start to do away with errors caused by accidentally striking the wrong keys.

Another safeguard which he later threw around the work of the machine was the "locked keyboard," a most ingenious idea of his own, which guarded against the possibility of the operator accidentally striking a wrong key after setting up the amount.

When the patent application was filed, in 1885, and the particulars about Burroughs' invention were made public, business men began to see the importance of the device, and, through the efforts of the man who had secured the original investment of \$700, considerable capital was interested.

In January, 1886, the American Arithmometer Company was organized in St. Louis, and the world-old dream of a bookkeeping machine was at last a commercial actuality, although it was several years before it became a marketable commodity.

With the money raised by the formation of the company, Burroughs set to work with redoubled energy on the model, and his glowing promises encouraged the investors to look for early returns on their shares. The next model which he completed did not satisfy him, however, and he refused to have it marketed. He continued to work with might and main at his bench in the Boyer shop,

The Story
of a
Great
Idea

First
Com-
pany Or-
ganized
in 1886



"Continued to work with might and main at his bench and absorbed money at a rate which amazed the stockholders."

and his experiments absorbed money at a rate which amazed the stockholders. There were always new ideas to be incorporated, new difficulties to be overcome, and by the time the first patent was granted in 1888 Burroughs had several additional applications under way, and more money was required at once.

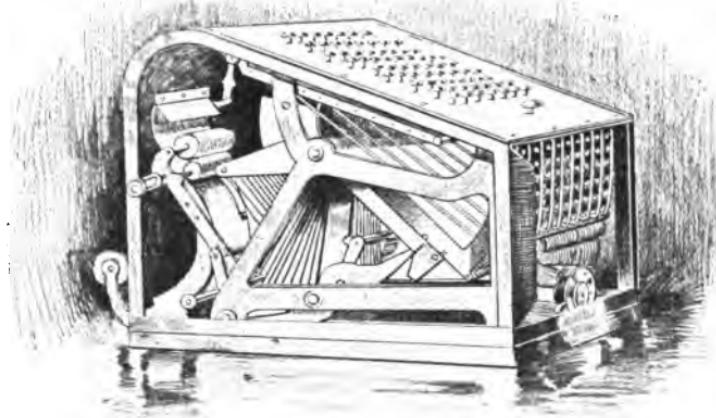
The Story
of a
Great
Idea

In spite of murmured protests that it was "throwing good money after bad," the stockholders held a meeting on June 23 of the year mentioned, and voted to increase the stock from \$100,000 to \$200,000. The additional issue was offered for subscription, and the money began to disappear in the same way as that which had gone before. Early in 1889, however, the clamor of the investors became so great that Burroughs consented to a contract with Mr. Boyer to make the necessary tools and build a lot of fifty machines, although he was far from satisfied with his work, and wanted to be left alone to "coddle" it and make various changes.

It was a tremendous undertaking to prepare for the manufacture of this entirely original mechanism on a large scale, a task involving an extravagant outlay of time and money before there could be anything to show. First there were endless plans and drawings to be prepared. Then came the making of all the "tools" used in building the machine, which included hundreds of different dies, cutters, jigs and special fixtures. The rest of the year 1889 was spent in this preliminary work, and it was the spring of 1890 when Joseph Boyer began to deliver machines on the contract for fifty.

Four of these experimental machines were quietly placed in the dry goods store of Scruggs, Vandervoort & Barney, St. Louis, for trial, and at a meeting held in July, Burroughs was instructed to take five machines to New York and place them in various banks and business houses. Thus, the first practical test of the machine was begun. It was also disclosed at this meeting that the company was once more out of money, its only possession, aside from the patents, being an indebtedness of \$6,000.

First
Four
Ma-
chines
Tried



The first machine which Burroughs submitted for public trial. It proved a failure because of the lack of automatic control and shockless printing mechanism which were afterward added by the inventor.

CHAPTER VIII.

Failure of the First Fifty Machines, as Burroughs Had Predicted

"There is another thing besides honesty that you need, you need courage; I don't care how honest a man is, if he is afraid, he does not amount to much in public or private life. A man has got to be game, got to be decent, got to be something more, for I don't care how brave he is, how honest, if he is a natural born fool you can't do anything with him; you have got to have not only courage and honesty, but you have got to have capacity, to enable you to see what is to be done and get about doing it in the right way."

MANY stories which are told of the Company's progress at that time seem amusing now, but were no laughing matter then.

Of the fifty machines which had been built on contract, only a dozen or so were placed out on trial, and the reports from these discouraged the Company from letting any of the others get out, so they represented practically a total loss, as Burroughs had feared.

In one sense these machines were perfect, but only in the same sense as a piano or violin, which gives perfect results under the manipulation of a true artist who is skilled in its technique, but may emit the most appalling sounds in the hands of an awkward performer. The chief difficulty was that no two persons operated Burroughs' machine in the same way. One man would pull the lever slowly and evenly; another jerked it violently, and thus obtained results as amazing as those of the beginner on the piano. Since it was impossible to have all clerks and bookkeepers learn the operation of the adding machine as they would learn the piano, it is easy to see that there was great confusion in the offices where these first machines were tried out.

Burroughs himself could do almost anything with his creation, of course, and his public demonstrations were beautiful to behold. But many who witnessed went away wagging their heads and declaring that they

Ma-
chines
needed a
"Gover-
nor" to
Control
Action

The weren't to be fooled by a "faker" who performed mathematical wonders in his head and then printed them with his machine.

Idea

All efforts to educate people to exercise care in the operation of the machine were wasted, and were finally given up in disgust. Burroughs himself passed through the fiercest disappointment of his life, for here he saw the final ruin of all his cherished hopes, and just at the point where he thought the struggle had been won.

One night the inventor went home after a whole day spent in listening to bitter complaints from his associates, and it seemed as though he had reached the very end of the road and come face to face with a stone wall which even his genius and determination could not surmount. For years he had been fighting off disease by sheer force of will power, the knowledge that he had a work to do and dared not give up until it was finished. Now, his face was drawn and haggard, there was the light of fever in his eyes; but he locked himself into his little room, and set to work as even he had never worked before.

**He
Succeeds**

Alone in his shop, through three days and nights, he worked unceasingly, with scarcely a pause for food or rest. But when at last he emerged and locked the door behind him he had worked out a practical mechanism to absolutely control every stroke which the operator applied to the lever, governing each function of the machine and the manner of its operation—regardless of the inexperience, carelessness or violence of the operator. He could see the completed machine before his eyes as plainly as though it actually existed in brass and steel.

Soon this device, which is now famous as the "Burroughs Automatic Control," was put together in rough form and applied to the machine.

The device met every test, and responded so perfectly to all demands made upon it that Burroughs was at last entirely satisfied, and started to build several machines

by hand. The matter of manufacturing the perfected machines on a large scale was then discussed—but the old difficulty of finding funds was as great as ever. Burroughs threw himself heartily into the work of raising funds, and gave public demonstrations in various places, using one of his hand-made models, in the hope of attracting investors, but with little success.

He also continued to experiment through the entire year 1890, refining various parts of the machine and making minor improvements which his associates considered entirely unnecessary.

Failing entirely to raise money from any of the sources to which it turned, the Company found itself toward the close of 1890, in sore straits, with all of its resources exhausted in completing the experimental work, and nothing left with which to build and market the machines. So it looked for a time as though the project would finally have to be abandoned just when success was at hand.

Finally, however, when it came to a choice between finding more money or losing all they had put in, the directors managed somehow to get hold of additional cash. Immediately this money was in hand everyone took heart again, and before the coming of 1891 a new contract had been given to Mr. Boyer to make an entirely new complement of tools and to begin building one hundred machines as soon as possible.

This work was much advanced by the fact that Burroughs entered into it with enthusiasm and threw all his wonderful energy into the work. Where he had slighted the first lot of tools because he knew that they represented a waste, he now insisted on the most scrupulous care in the making of every detail, and he established a standard of accuracy in construction which has made the Burroughs machines famous among expert mechanics ever since.

The
Story
of a
Great
Idea

Direc-
tors
Raise
More
Money



"I have ended the last of my troubles."

In the summer of 1891 the first of the hundred machines began coming through the Boyer machine shop, and there were indications at last that the adding machine had reached the dignity of a marketable commodity.

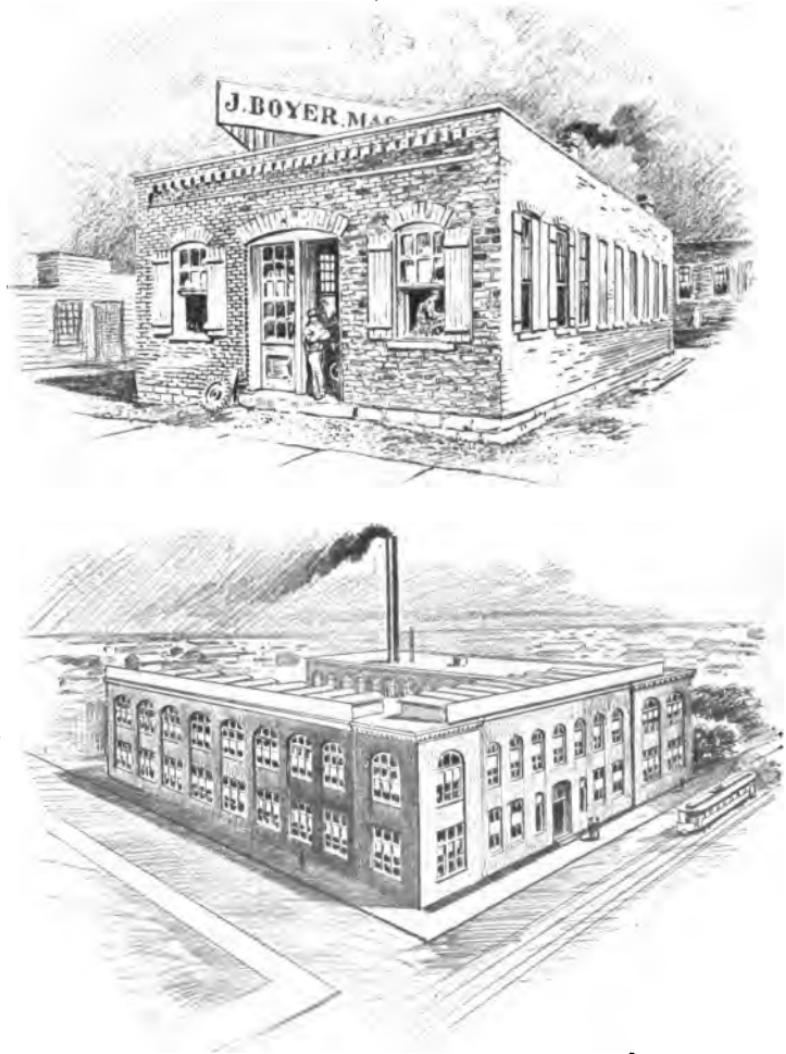
The Story
of a
Great
Idea

One thing which destroyed Burroughs' perfect peace of mind at this time, in addition to his health, which declined steadily, was the thought of the fifty imperfect machines that had been built. He did not rest until all that had been placed out on trial were called in, and then the entire lot were stored away in a back room of the shop. One day he paid a stealthy visit to the dusty old room where they were stored, and sat for a long time in retrospective study of them. What memories of hardship, delayed hopes and disappointments they aroused.

He had won a success, and fortune was within his grasp, all built on the foundation of these incomplete machines, but they reminded him of everything he wanted to forget, and he could not endure to have them in existence, even here in this dusty storeroom. Straightway he attacked the matter in his characteristic fashion, and carrying them in his arms to the window, hurled them one by one, a twisted mass of wreckage to the pavement below. When he had disposed of the last one, he called Mr. Boyer to come and see the ruin. "There!" he exclaimed, "I have ended the last of my troubles."

Thus was demonstrated the wisdom of conducting all experiments at the expense of the Company, instead of the purchaser, and from that day to this no Burroughs machine has ever left the factory until its worth and efficiency has been proven beyond the possibility of a doubt. The machine has been constantly improved and developed on the widest scale, and its makers now hold a large number of patents and have many additional applications pending, covering the entire field of adding machine development to the present time, but none of these are incorporated in the machines offered to the

All Bur-
roughs
Ma-
chines
Perfec-
tive
Before
Sold



Top:—Joseph Boyer's machine shop on Dickson Street, St. Louis, where the first adding machines were made.
Bottom:—Old plant in St. Louis—outgrown in 1908.

public until they have "made good" through long and exhaustive tests.

With the last of its mechanical troubles out of the way, the problems of the American Arithmometer Company resolved themselves largely into the one of marketing the machines to the best advantage. Having achieved what the world had declared impossible, Burroughs now found that scarcely any one had an idea of rewarding him by buying the machine. It was regarded as a wonder of science, something to be observed under the tender shelter of a glass case, and marveled at, but there was only occasionally a business man who could bring himself to appreciate that this machine meant time, work, and money saved *for him*.

Before the machine could be made a real success, it was necessary to begin an entirely new undertaking—the task of educating the public in the everyday uses and economy of the machine. It was not until a dozen years later that this was really brought about on a broad scale. In the meantime, the machine was sold largely to banks, who soon learned its wonderful saving of time and labor.

By 1895 the business had grown to a point which justified larger quarters and the Company moved into the upper story of a new building which Joseph Boyer had erected on a new site near the center of the St. Louis business district.

In this building the "Registering Accountant," as it was called at that time, grew into a semblance of the wonderful Burroughs Adding and Listing Machine as it is today.

Before many years had passed, however, these quarters became outgrown, and in 1904 the whole plant—men, machinery and equipment—was picked up bodily and set down in the handsome Burroughs Factory at

The
Story
of a
Great
Idea

First
Sold to
Banks

The Detroit, known today as one of the model industrial plants
Story of this country.

Great Idea The inventor, contrary to the tradition concerning inventors in general, lived to see his dreams come partly true, and to reap the substantial reward of his labors, for his holdings in the Company grew into a goodly fortune.

Gradually, however, the dread tuberculosis which had first seized him in the bank at Auburn, tightened its hold and he was compelled to seek a sunnier clime in the hope of prolonging his days. At Citronelle, Alabama, he made a home, and here his last days were spent, employed with the mechanical problems which he loved and which were second nature to him.

William Seward Burroughs passed away at Citronelle, Sept. 14, 1898. He was buried in beautiful Bellefontaine Cemetery, St. Louis, and a tall marble shaft erected by his associates marks the spot where he rests, serene at last, after the struggles and privations of a life that was hard beyond the ordinary, but crowned at last with the triumph of work well done.

Section II.

Some Practical Suggestions

"Yes, sir; a book is not dead paper except to sleepy minds. A book is a man giving you his best thoughts in his very best words. It is only the shallow reader that can't learn life from genuine books. I'll back him who studies them against the man who skims his fellow creatures."—*Chas. Reade.*

A B E T T E R D A Y ' S W O R K

		*
157.38	157.38	
762.91	762.91	
435.75	435.75	
800.76	800.76	
43.02	43.02	
987.25	987.25	
500.00	500.00	
1,003.50	1,003.50	
245.65	245.65	
82.47	82.47	
4,250.86	4,250.86	
1,014.75	1,014.75	
243.92	243.92	
914.75	914.75	
5,475.80	5,475.80	
14,850.07	14,850.07	
410.25	410.25	
.74	.74	
9.10	9.10	
27.72	27.72	
896.35	896.35	
1,238.63	1,238.63	
7,800.00	7,800.00	
10,000.00	10,000.00	
127.34	127.34	
77.01	77.01	
303.24	303.24	
3,808.89	3,808.89	
458.92	458.92	
1,456,789.34	1,456,789.34	
11,025.22	11,025.22	
600.10	600.10	
2,250.85	2,250.85	
14,823.45	14,823.45	
8,207.12	8,207.12	
2,100.00	2,100.00	
<hr/>		
1,552,724.11	1,552,723.11	*
2		
3		

Facsimile of Figures Added and
Listed by hand by the average
Clerk in 9 minutes.

Facsimile of Figures Added and
Listed by a Burroughs in 1½
minutes by an average operator.

FIGURE 1

Why the Burroughs is a Necessity

Expert operators on a Burroughs can add and list
500 checks, different amounts, in 6 min. 18 sec.

CHAPTER IX.

Hand vs. Machine Methods

"Progress is a law of nature—and
nature brooks no interference."

IT doesn't matter how many prizes for rapid computation a man may have, he is always willing to acknowledge that the Burroughs can do it better *in the long run*, than he can.

Ex-President Eliot of Harvard hit the nail squarely on the head when he said, "A man ought not to be employed at a task which a machine can perform." A Man
Shouldn't
do

It isn't fair to the man, who is thus reduced to a machine level, with a constantly lessening ability to do more and *better* work.

It is not fair to the employer, who is paying more than the work could be better done for.

Put an eight-dollar-a-week clerk at listing and adding figures, and the left hand column in Figure 1 (see opposite page) is a fair example of what he would produce in nine minutes if he were earning his money.

The column on the right shows what the same clerk could do in one-sixth the time, or one and one-half minutes.

That is but one little example. Multiply it by thirty in a single day and we have saved three and a half hours, or fifty cents a day, or nearly forty per cent of that clerk's wages.

You have that time in which to use him to look up facts for reports, get together figures on the selling expense in certain territories—doing the things you wanted done, but which no one had time to do. Yet the machine would cost you less than eight cents a day—to save fifty cents.

Think it over!

A B E T T E R D A Y ' S W O R K

CLASSIFIED TRIAL BALANCE

TITLE OF ACCT'S.	JANUARY			FEBRUARY		
	DR. BALANCE	CR. BALANCE	DR. INCREASE DECREASE	DR. BALANCE	CR. BALANCE	DR. INCREASE DECREASE
Capital Ac.						
Capital Add.	100,000.00			100,000.00		
Washing. Equip.	30,000.00			30,000.00		
Furniture Stock	15,000.00			15,000.00		
Supplies	22,370.00			22,370.00		
Sal. Net Profits				2,982.00		
Sal. Net Losses		2,982.00			4,949.00	
Net Assets	170,353.00			174,695.00		
	170,353.00	170,353.00		174,695.00	174,695.00	
Assets						
Bank	17,585.00			23,404.00		
Buildings	40,000.00			40,000.00		
Office & Equipment	500.00			500.00		
Gas & Fuel	1,625.00			1,625.00		
Miles	67,696.00			79,251.00		
Gasoline	860.00			860.00		
Phone	2,900.00			2,900.00		
Delivery & Sales	915.00			835.00		
Interest	478.00			547.00		
Insurance	365.00			350.00		
Tire	70.00			65.00		
Postage	15.00			18.00		
Stationery	300.00			315.00		
Advertising						
Catalogues	400.00			375.00		
Books Rec.	4,500.00			4,500.00		
Accrued Acc.	37,645.00			30,952.00		
	37,645.00	30,952.00				
Liabilities						
Accounts Pay.	2,047.00					
Trade	185.00					
Depreciation	3,230.00					
Auto Tax	260.00					
Net Assets	170,353.00			174,695.00		
	170,353.00	174,695.00				
Notes						
Purchase	81,348.00			95,769.00		
Salts		20,478.00			24,777.00	
Inventory Ac.	67,696.00				79,251.00	
Sal. Net Profits	6,886.00			8,259.00		
	88,175.00	88,175.00		104,028.00	104,028.00	
Expenses						
Insurance	35.00				35.00	
Gas, Light &c	20.00				45.00	
Postage	11.80				15.70	
Stationery	36.00				25.00	
Advertising	50.00					
Catalogues	50.00				25.00	
Newspaper	432.00				440.00	
Salaries	1,560.00				1,560.00	
Labor	500.00				500.00	
Shady Expenses	750.00				1,000.00	
Legislation	68.00				89.00	
Taxes	125.00				125.00	
Co. & Exchange	10.00				12.00	
Repairs	49.00					
Lost & Found	260.00				129.00	
	260.00	129.00				
Interest		217.00				186.00
Sal. Gross Prof		6,886.00				8,259.00
Sal. Net	2,982.00			4,342.00		
	2,982.00	4,342.00				
	7,063.00	7,063.00			8,443.00	8,443.00
	193,784.00	193,784.00			207,164.00	207,164.00

January items required 5½ minutes of writing.
Entire balance sheet completed in 11 minutes.

A B E T T E R D A Y ' S W O R K

CLASSIFIED TRIAL BALANCE.

TITLE OF ACCTS.	JANUARY			FEBRUARY		
	DR. BALANCE	CR. BALANCE	OR INCREASE DECREASE	DR. BALANCE	CR. BALANCE	OR INCREASE DECREASE
Capital a/b						
Cash						
Working Cap.						
Treas. stock						
Surplus						
Est. Net Profits						
Est. Net Gain						
Net Assets	17035324	298266		17469565	434261	
	17035324	17035324		17469565	17469565	
Assets.						
Cash	1758564			2340453		
Buildings	4000000			4000000		
Cars & Trucks	150000			150000		
Fur. & Fix.	167500			167500		
Misc.	6769628			7925126		
Real Estate	86000			86000		
Capital	290000			290000		
Hillage	98516			83516		
Interest	49866			54706		
Insurance	38300			35000		
Fns.	1000			6500		
Postage	1500			1600		
Stationery	30000			31500		
Advertising						
Catalogue						
Bills Rec.	40000			37500		
Accounts Rec.	450000			450000		
	3764584			3095208		
Liabilities						
Accounts Pay.						
Taxes	84758					
Depreciation	12500					
Since July	23060					
Net Assets.	26016					
	17035324			17469565		
	176C1658*	176C1658*		18654809*	18654609*	
Misc.						
Purchases	8134877			9876936		
Sales		2047874			2477715	
Inventory Ret.		6769628			7925126	
Ret.gr. Profits	682625			625905		
	8817502*	8817502*		104C2841*	104C2841*	
Expense Items.						
Insurance	3500			3500		
Fuel, Light, etc.	8000			15000		
Postage	11800			15700		
Stationery	3655			2500		
Advertising	5000			49000		
Catalogue	5000			50000		
Misc. Expense	43288			100000		
Salary	156000			156000		
Fir.	50000			50000		
Trade, Expense	75000			100000		
Legislation	6500			129500		
Taxes	10000			129500		
Sel. & Exchange	10800			1210		
Repairs	4360					
Lost, e/ad Notes	26016			12908		
Interest		21700				
Net Gross, Prof.		62625				
Ept. Net Prof.	898286			434261		
	17043285*	7043254*		844559*	844559*	
	19378946*	19378946*		20716917*	20716917*	

January required 2½ minutes. Entire statement required 4½ minutes
 Gross saving of over 100% in time over hand method.



The electrically-operated Burroughs, by which the work of pulling of handle
in adding and listing is made unnecessary.

CHAPTER X.

The Advantages of a Mechanical Bookkeeping Assistant to the Retailer

HERE are some retailers, and now and then a banker, who add figures in the old way—compelling the mistake-making human machine to do the tiring, time-wasting, nerve-racking work of adding, listing, dividing, multiplying, subtracting figures.

Every moment a clerk spends on work that a machine can do, he is wasting your time, you are handicapping him and your business.

You will admit if you had more time you could make more money—if that clerk had more time he could make more money for you.

The up-to-date retailers are now following the practice of the most successful men who get more and more out of each hour by the simple method of giving the details of work to machines, typewriters, telephones, time-clocks, computing scales, cash registers, cash carriers, now book-keeping machines.

Give yourself and your clerk time to do the work *right*.

You are losing money to-day, every hour, by clinging to the old methods.

Conspicuous success in any size business can usually be traced to the perfection of a *machine-like* organization.

All the resistance to the development of any enterprise that makes a useful thing or performs a useful service for humanity, is the failure of some part of the machinery of organization to perform with *clock-like* precision and efficiency.

To err is *human*.

To shirk is common *human frailty*.

Man Revolts

Some Practical Suggestions To tire, sooner or later, is only *human* rebellion against *machine* work, for one never tires of pleasant, diversified occupation.

Any retailer who does a credit business knows how the day when he makes statements is a constant source of worry.

Nine cases out of ten it means night work from one to three nights of the month.

If statements are sent out every week, as in some stores, it means night work still more frequently.

No matter what credit system may be used, the Burroughs will save time, because it makes it possible to handle statements from 50 to 75 per cent. more quickly.

Errors are Costly It eliminates the arguments, hard feelings, and loss of trade which come as a result of errors in statements, because the machine does its work accurately.

Errors are important; if you under-add a statement you lose the price for your merchandise sold.

If you make an error *against* a customer you may lose the customer.

It costs too much to *get* trade—and the profits on each sale are too small—to take any chances either on losing money on the one hand or a customer on the other.

Your cashier, or you, can make statements twice as fast on a machine as can be done by either of you by hand.

When you are through you know the work is right.

The Retailer Needs a Burroughs A retailer's problems are different from any others, we know that—and we have built a special machine to help him care for his problems.

It is made to meet the *needs* of the retailer with a small business.

It is being sold to him.

He is using it—finding it valuable, helpful—something he could not do without.

Why? Because he tried it.

The retailer thinks: "I haven't any use for an adding machine."

Some
Practical
Sug-
gestions

Didn't the grocer think the same thing when cash registers, computing scales, refrigerators, cash carriers, coffee-grinders and cheese-cutters, and every other work-saving, time-saving and worry-saving device was first introduced to his attention?

But the improvements came, didn't they, and staid? And now those who use them are making more money because they have more time.

With the Burroughs the savings are equally real.

It takes care of all the adding, listing and *totaling* of figures done in a store. Just think what that means—just figure out what it means.

You may have a cash register which takes care of your *cash* business.

If you do a credit business amounting to one-half or three-fourths of your total, you ought to have a Burroughs to take care of your credit transactions.

Bur-
roughs
Aid

With the Burroughs you can get an accurate total of your credit business—it will give you a check on your C. O. D. business.

The cash register affords an excellent method of showing you *what* each sale is, and the Burroughs gives you the totals of what you have done each day, and how much you have made.

How many hours a week do you spend over your statement of business done?—figuring out what proportion of profit you have made? The Burroughs could do this in one-fourth the time.

How many times have you gone wrong on your bank book, i. e., not been able to check up with the bank? Some folks always take the bank's word for it. That is bad practice, because banks make mistakes, not always against themselves, either.

Check
Up Your
Bank

Check up your bank statements.

Some Practical Suggestions You can do it three times as quickly with a Burroughs, and know it is right, when it is done.

Briefly here are a few things, that many hundreds of retailers are to-day doing on a Burroughs, at a less cost than they used to do in the old expensive hand way:

Some retailers list on the back of the stub of their check book a copy of the daily deposit ticket; others make this copy by hand. The ticket can be made in duplicate on the machine in one operation in one-sixth of the time.

In stores where sales are recapitulated by clerks the proprietor is able to determine the actual worth of each clerk and to pay what each one earns, not what he asks for. The work of recapitulating sales is performed very rapidly on the Burroughs.

Many list and add the cost and selling price of each article sold, and are able, at the close of the day's business, to determine the actual gross profit. This is especially practicable in concerns in which each article is given a stock or lot number, this number being listed with the eliminating key depressed, the figures representing cost and selling price being listed and added at one operation on a No. 13 or 15 Burroughs with Split & Normal device.

The amount of detail involved in handling reports from the different departments of a store, by the old method often influences proprietors to do without a definite knowledge of the earnings and expenses of each department of their business. The ease with which details are handled on the Burroughs makes a monthly or even a daily report possible, and so fortifies the proprietor with exact knowledge as to conditions in each department and enables him to correct wrong tendencies before they result in heavy losses.

Where the balance of every customer's account is brought forward daily, the proprietor has the advantage

of knowing each night just how much is due him from each customer and the total due on all outstanding accounts. By adding the day's sales to the total outstanding on the previous day and subtracting therefrom the amount received on account during the day he can know each night whether collections are keeping up with sales or whether he should limit credits and bring pressure to bear on delinquent customers. With the aid of the Burroughs this desirable information is readily obtained in a very few moments after the close of business.

If C. O. D. orders are numbered consecutively and a C. O. D. register prepared before the goods are sent out, by listing the numbers and adding the amounts on a loose leaf sheet with the Burroughs, losses from this source will practically be eliminated. As collections are turned in to the cashier they are credited on the sheet, as are also goods returned. Those not so accounted for represent the outstanding C. O. D. orders in need of attention.

The Imprest Cash System offers an effective check against loss through carelessness or dishonesty in the handling of petty cash; gives a consecutively numbered voucher for each expense item; simplifies the distributions to proper accounts, and makes it possible to balance petty cash at a moment's notice.

The daily cash balance may be obtained by listing on the Burroughs the previous balance and the cash received, offsetting these by the various items of expenditure and the balance of cash on hand.

The Daily Proof of Posting System will prove beyond the question of a doubt that each and every posting made to the ledger, both debit and credit, is correct; also that the footings of the cash, sales or any other original records from which the postings were made, are correct. This system reduces the possibility of error in the trial balance to a minimum.

Some
Practical
Sug-
gestions

Some When statements are made on the Burroughs, the
Practical balance, which is automatically computed and printed,
Sug-gestions serves as a check against the footing and balance of the
accounts. Many concerns make statements at the rate
of 250 per hour.

Our new booklet — "How days and dollars can be saved" — explains the Burroughs statement system in detail. Gladly sent on request.

Incoming invoices can be listed and totaled by departments daily, weekly or monthly in one-sixth the time the same work can be done by hand. The invoices are assorted by departments and separate totals taken.

In the compilation of stock records and the taking of inventories, the time and labor saving possibilities of the Burroughs, both in adding and in extending values, are generally appreciated. Especially is this true in establishments where numbers are assigned to designate certain stocks. The possibility of listing stock numbers, quantity and value at one operation, on the Burroughs No. 15 Split & Normal cuts the work and inconvenience of taking stock in half, besides making a neater and more accurate record.

The writing of names in a trial balance is of doubtful advantage. The accounts may be identified by numbers instead, and the folio number and debit or credit balance listed on the Burroughs at one operation. This method is daily growing in favor with bookkeepers everywhere. If the daily proof of posting has been made, the taking of trial balance will be greatly simplified.

Comparative These comparative statements are very valuable and
State-ments can be readily obtained with a Burroughs, daily, weekly
or monthly.

Where the McCaskey, Hoover, or other charge systems are used, in which the total of the previous purchases

is brought forward and added to the purchases for each day, the Burroughs should be used to verify the correctness of the footings, thereby avoiding loss and possible misunderstandings on settlement days.

The speed and accuracy of the Burroughs in checking items and proving the extensions and footings of goods received should alone demonstrate its usefulness to the merchant.

Many firms who make a practice of discounting all, or nearly all of their bills have discarded the purchase ledger and voucher all bills as received, filing them in a "tickler" file for payment before the expiration of the discount period. The Burroughs Split & Normal simplifies the keeping of voucher records by listing invoice, voucher or check number and amount at one operation.

The machine will automatically audit and check all figures, either in books or on sheets, in much less time and much more accurately than by mental process. A boy with a machine is a valuable assistant for your book-keeper who thus gains time to devote to more directly profitable work.

By the use of the Burroughs Split & Normal machine it is possible to list the number and amount of outstanding checks at one operation, thus simplifying the checking of the bank's monthly statement of account.

Just here we want to say a word about our new 48 page book for Retailers. Full of time-saving systems and written especially for the man who works over-time on his accounting work. The title of the book is—"Why Don't You Go Home?"—sent free on request.

New
Book
for
Retailers

A BETTER DAY'S WORK

FIGURE 2

The Imprest Cash Envelope showing items added and listed with the Burroughs.

CHAPTER XI.

An Easy and Simple Method of Handling Petty Cash

THE Burroughs Imprest Cash System offers an effective check against confusion and loss through carelessness or dishonesty in the handling of petty cash, while a considerable saving of time is effected in the listing of petty cash items on the Burroughs.

A check is drawn for an amount adequate to meet A
petty expense items for a certain period (preferably one Check is
week), and the amount of this check charged to the im- Drawn
prest account in the general ledger.

Vouchers are supplied which are numbered consecutively. When an expense item is paid out of this fund, a voucher is drawn for the amount of the expenditure, showing a proper distribution of the expense. This voucher (Figure 3), should be signed by one in authority and where a receipt is obtained it should be attached thereto.

The vouchers are then placed in the cash drawer, and when the fund is nearly depleted, they are added and

BURROUGHS IMPREST CASH VOUCHER.						
Date <u>Sept. 25</u> 1909						
To	<u>American Express Company</u>					
Amount	<u>Three Dollars</u> \$ <u>.30</u>					
Entered on Summary No	<u>1.</u> <u>J. J. Moore</u> Approved Secretary					
DR. PET. EXPEND ETC. <input checked="" type="checkbox"/>	DR. EXP. AND CTG. OUT	DR. OFFICE EXPENSE	DR. REG. AND ALL	DR. REG. AND ALL	DR.	

FIGURE 3

A voucher similar to the above is made out for each expenditure.

Some listed on the imprest cash envelope under their respective Practical headings, by the Burroughs Adding and Listing Machine. A check is then drawn for the total amount of these vouchers, thus replenishing the fund to its original amount.

Postings are made direct from this envelope, crediting the imprest account and charging the various expense accounts. The imprest account will be balanced by a debit of the check from the cash book, and the expense accounts charged off in the usual manner.

By this method the petty cash will at all times stand charged with the original amount of the fund, and at any time a corresponding credit may be obtained by adding and listing the vouchers with the machine and combining with this result the total cash on hand in the drawer.

The vouchers and receipts are filed in the envelope, (Figure 2), making a permanent and concise record of all petty expenditures.

Actual size forms of sheets and envelope sent free for a request.

CHAPTER XII.

The Burroughs Cash Received System

SOME phases of bookkeeping are common to all business concerns. Checking and entering incoming cash are two of them. Every man greets incoming cash with a certain satisfaction and wants it handled promptly and without errors. But the shrewd business man constantly strives to cut down the expense of handling the details of his bookkeeping.

In many offices, the time, work, money, and worry spent in bookkeeping detail is fifty per cent. less efficient than it ought to be. That means it costs too much. As an instance, many a good business man employs the same old method of posting Cash Receipts to a cash-book and then again posting these same items to the ledger.

Econo-
mize
Routine
in Book-
keeping

This is double work.

Did you ever give a moment's thought to how much of your bookkeeper's time could be devoted to other work about the office if he knew how to cut out any one of the various books he uses? Have you ever figured out, for instance, the great satisfaction it would be to post all your cash items on the same day they are received, and to know positively at the close of the day's business that all the postings are correct and that all the cash has gone into your strong box, and that every debtor has been properly credited?

There are many advantages of using the Burroughs Cash Received System, but probably its greatest advantage is that it eliminates all journalizing of cash remittances. And you know what a tremendous saving of time that means.

Elimi-
nates the
Journal-
izing

The system itself, may be likened to that employed by banks when they post to the ledger direct from the deposit slip; also to that of some commercial houses in which sales are posted to the ledger direct from the sales sheet, without any intermediate classification.

A B E T T E R D A Y ' S W O R K

W. H. ALLISON

H. C. ALLISON

H. D. ALLISON

W. H. ALLISON

CUSTOM HOUSE BROKERS
AND
FORWARDING AGENTS
63 FORT STREET WEST
BELL TELEPHONE MAIN 663
HOME " CITY 663

Import Shippers give prompt attention
when sending via

MICHIGAN CENTRAL R. R. CO.
CANADIAN PACIFIC RAILWAY CO.
WABASH RAILWAY CO.
LAKE SHORE & SOUTHERN RAILWAY CO.
PEIRE MARQUETTE RAILROAD CO.
GRAND TRUNK RY CO.
AMERICAN EXPRESS CO.

DETROIT, MICH., August 14, 1909. 190

Messrs E. B. Fox & Company,

Detroit,

MICHIGAN.

Gentlemen:-

U You will find enclosed our check for
one hundred seventy five dollars (175.00) to cover
your invoice of August 2nd.

Yours very truly,

W. H. Allison.

W.

175⁰⁰

FIGURE 4
Original letter from Remitter is marked

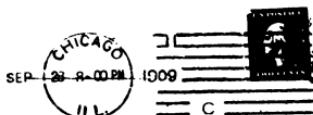
Remittances come in usually through the mail or over the counter. When a letter is received enclosing a remittance, the cashier writes the amount of the remittance on the letter, usually in blue pencil. (See Figure 4.) If the remittance comes without a letter, he tears open the envelope and writes the amount and date on it. (See Figure 5.) Should the letter refer to other matters as well as the remittance, a special memo of the remittance is made out (see Figure 6) and the letter is filed regularly. Money received over the counter is recorded on special receipt blanks in duplicate; one is given to the customer and the other is filed for reference and posting. (See Figure 7.)

Some Practical Suggestions

How the System Works

The cashier first lists and adds his remittances on the Burroughs; he then adds the amounts written on the letters, envelopes, or receipt blanks. When these two totals agree, he deposits the money and passes the letters, envelopes and receipts to the bookkeeper for his records.


Rogers & Company
Engrossers and Printers
Chicago



Mr. F. C. Fletcher,
a/c Mr. Eddy,
Detroit Stove Works,
Detroit, Michigan.

22⁰⁰

FIGURE 5

If no letter, use the envelope

BURROUGHS CASH RECEIVED SYSTEM
BURROUGHS ADDING MACHINE COMPANY.
DETROIT, MICH.

Aug 14 1919

AMOUNT OF CASH RECEIVED \$1.00

PAYING BILLS

Insurance July 15th \$43.22
5% discount

DISCOUNT .24

TOTAL POSTED \$43.28

NAME Wilbur B. Bosworth

TOWN Detroit

STATE Mich

FIGURE 6

If a voucher-check is sent, use this kind of a blank.

The bookkeeper sorts these by accounts and posts the amounts direct from the letters, envelopes or receipt forms. As he does this, he inserts a Burroughs marker at each account to which he posts, similar to illustration on page 99.

When the customer takes a discount, the bookkeeper before posting the remittance, compares it with the charges shown on the ledger, to ascertain if the discount taken is correct. If it is, the discount is added to the blue pencil figures on the remittance advice, (see figure 8) and the

Some
Practical
Sug-
gestions

No. 4768	IRA M. SMITH CO.
Grand Rapids, Mich. 8/14 1909	
Received of Jno. R. Smith	
Thirty-Five 45 Dollars	
In apply our accts.	
\$35.00	IRA M. SMITH CO. By J. Jones

No. 4763	IRA M. SMITH CO.
Grand Rapids, Mich. 8/14 1909	
Received of Thomas Branham	
One Hundred & Seven 75 ⁷⁵ Dollars	
In three of our accts. to date	
\$111.25	IRA M. SMITH CO. By J. Jones

No. 4764	IRA M. SMITH CO.
Grand Rapids, Mich. 8/14 1909	
Received of Jno. C. Westmore	
Cash 3/14. Discount @ 5% - \$35.00 Dollars	
In settlement of account dated 6/18/09	
\$65.00	IRA M. SMITH CO. By J. Jones

No.	IRA M. SMITH CO.
Grand Rapids, Mich. 10.	
Received of _____	
Dollars	
\$	IRA M. SMITH CO. By _____

FIGURE 7

When money comes over the counter, use this form of counter-receipt.

Some total amount is credited to the customer's account. In this Practical case, the debit charge against the customer was \$66.33. He Sug-gestions was allowed a 2 per cent. discount and remitted \$65.00 net.

After posting all the remittances, the bookkeeper can quickly prove his work by listing on the Burroughs, the amounts posted in the ledger, the accounts affected being indicated by the markers.

Having secured this total, he then takes the letters, envelopes or receipts and adds and lists on the Burroughs, all the discounts shown. If the total amounts posted, minus the total discounts agree with the cashier's total of cash actually received, you see several things have been proved at once.

Four Things

First—The books agree with the cashier.

Second—The amounts are posted to the right account.

Third—The discounts are proven.

Fourth—The work is done on the same day the cash is received so that there is no journalizing of cash to cash book.

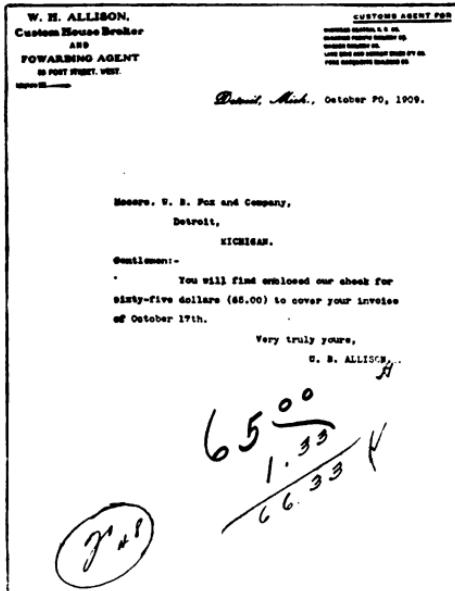


FIGURE 8
Actual cash received plus discount shows amount of cash.

And finally—The bookkeeper checks the cashier so both must be right each day.

The original letters, envelopes or receipts, after posting is completed, are filed away for reference. These are the records of original entry, and therefore should be filed carefully and when transferred, a record must be made so that they can be referred to whenever necessary.

Now to summarize the advantages of the Burroughs Cash Received System:

1. Cash is posted same day it comes in. That saves time.
2. Journalizing is eliminated with absolute safety. Work saved there.
3. Cashier and bookkeeper check each other. This checking is the safest method known.
4. Postings and extensions are verified with no loss of time.
5. A perfect record of cash received is filed daily, together with the adding machine slip showing total amount.
6. Impossible to post to a wrong account.
7. Work can be done from $\frac{1}{3}$ to $\frac{1}{2}$ less time. That saving is worth while.

A more complete description of the Burroughs Cash Received System will be found in a special booklet entitled, "A Better Cash Received System" which we have recently issued. This booklet contains 24 pages and the system is illustrated in every detail and described fully.

We'll gladly send you a copy on request.

Some
Practi-
cal
Sug-
gestions

Summary of
Advan-
tages

Interest-
ing
Booklet
with
More
Detail

A B E T T E R D A Y ' S W O R K

Daily Sales Sheet						Date	O. L. 16	199	
A		SALESMEN				F. W. Jones	T. G. Miller	Frank R. Dale	C. E. Flint
J. L. Way	Lett. C. Check	Salesmen		Salesmen					
		J. L. Way	Lett. C. Check	F. W. Jones	T. G. Miller	Frank R. Dale	C. E. Flint		
1390		4500		11235	*	7920	*	1480	*
4360		1800		15820	*	3605	1080	3046	
750		4025		630		450	3800	5025	
115		1400		938		9625	9008	5100	
620		4940		172		2055	4800	4500	
230		2400		3220		4791	9008	4530	
5090		72		3840		320	4800	8900	
2630		9150		43995*		2100	9008	8000	
3640		9500				1300	6520	6500	
3925		2473				12400		1600	
40780		400				520		3535	
5995		1350				20		38856	
17315		2945				0710			
4500		5010				4560			
255		2500				3230			
9250		2400				178953*			
6440		5405							
200		5028							
7100		250							
1350		3520							
150		3920							
1500		5475							
1500		8520							
1050		183373*							
500									
200									
177396*									
Recapitulation									
177396									
183373									
13953									
178953									
40508									
38256									
662581*									

B		Ledger Posting Proof							
Sales A to L		Sales M to Z							
238905*									
1390	320	750	278867*						
4360	21090	6460	2055						
115	12400	3230	9510						
50	60	3100							
21630	9710	3100							
40780	3230	4640	4560						
3000	14080	5995	7380						
2500	14080	17385	9008						
620	14080	520	480						
600	3860	7900	1480						
1198	3046	200	2430						
150	5025	4700	1920						
3000	4500	15503	1600						
1000	8100	5500	3535						
2000	6520	1200							
4500		3825	129795*						
18000	132786*	1440							
4535		2400							
4520		9500							
9150		400							
2473		13350							
2880		2952							
20500		5010							
2050		2400							
2500		5028							
3520		3930							
5600		110							
6520		11235							
720		15620							
938		780							
3230		172							
7250		3820							
3000		7920							
4500		96242							
4791		278867*							
238905*									
Recapitulation									
132786									
129795									
662581*									

FIGURE 9

The principle of the Burroughs Proof of Posting method is shown here. A is the sales sheet and B is the list of items taken from the ledger.

CHAPTER XIII.

Proving Your Daily Postings—A Prevention of Trial-Balance Troubles

"The reason why many a bookkeeper never gets more than enough to live on, is because he puts the emphasis on the wrong thing—doing a whole lot of cheap work rather than doing cheaply a whole lot of work. Think it over!"

THREE is no safeguard as effective for preventing errors in a trial balance as a daily proof of postings. If the bookkeeper proves his postings every day he can be assured that, in case an error creeps into the trial balance, it is due to transcribing wrong amounts to his balance sheet or making an error in footing and not to a mistake that has been made in posting a wrong amount to an account in the ledger. It is much easier for him to check back over the amounts entered on his balance sheet than to go back over his ledger and compare the postings with the books of original entry. The daily proof of postings gives him unquestionable assurance that all the amounts are correct and saves him time and overwork at the end of the month.

If the hand method of reverse proof of posting is used, where the amounts are transcribed to a sheet as they are posted and afterwards footed, so much extra work is involved that few bookkeepers care to undertake it and would prefer trusting to their accuracy in transcribing.

There is a method, however, by which a bookkeeper can prove his postings every day with an expenditure of very little time and labor and that method is the Burroughs Proof of Postings System.

The system is as follows: A colored marker is inserted at the page on which each debit or credit posting is made, the edge of the marker projecting slightly above the page. (See page 99.) As soon as the postings have been completed, the amounts indicated by the projecting

Saves
Time at
End of
Month

Be Right
Each
Day

Some markers are listed and added on the machine and the totals of debits and credits are compared with the totals taken from the sources of original entry.

Practical Sug-
gestions

In order to distinguish debit postings from credit postings, different colored markers are used, or, according to the practice of some bookkeepers, the debit markers are left projecting from the top of the pages and the credit markers from the bottom.

Run Through Ledger But Once

There are several ways of taking off the amounts with the machine. One method is to turn through the ledger, taking off the debits and then to go through again, taking off the credits. A shorter method is to add and list the debit amounts in the regular way and to list the credit amounts with the eliminating button depressed. The eliminating button prevents an amount being added. After all of the amounts, both debit and credit, have been transcribed, the total of the debits is taken. Then the credits, which are indicated by the eliminating symbol, #, are added. By this method it is necessary to turn through the ledger only once.

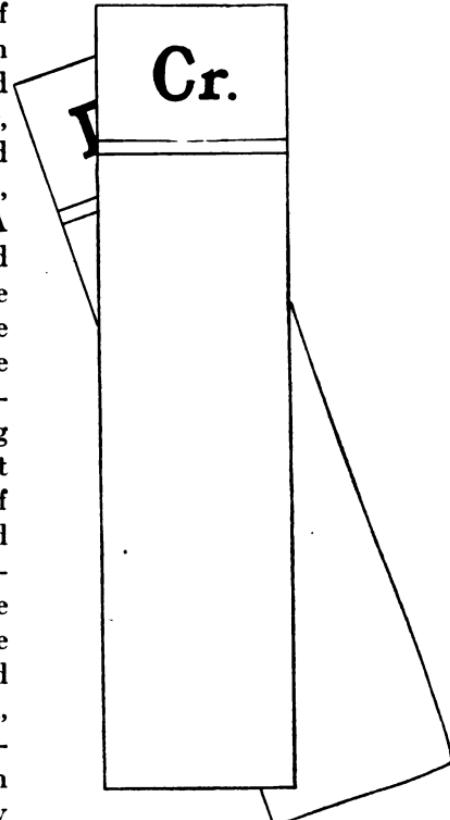


FIGURE 10

Burroughs Dr. and Cr. Markers

When using the No. 15 Split and Normal Burroughs for this work, the time required to add and list the debits and credits is still further reduced. This wonderful machine is capable not only of transcribing the debits and credits in two separate columns at one operation, but also of making a footing of both columns simultaneously. The debit postings are entered in one section of the machine and the credits in the other section. When all debit and credit postings have been listed in this manner, the total of both columns is printed by simply pressing a button and pulling the handle. By adopting this method the time required to transcribe debit and credit postings is reduced to a minimum. It might be remarked here, that there is no other adding machine that is capable of doing this work in the manner just described or that permits of as large totals as the Burroughs. In Figure 9 the principal steps in proving postings are given. Figure 10 is a reproduction of the Burroughs marker, which is inserted when the posting is made. A (Figure 9) is the original record from which the amounts posted are taken and B is the recapitulation of postings taken from the ledger. It will be noticed that the grand total on the sales sheet agrees with the grand total on the proof sheet. These two totals prove the amounts posted.

Some
Practical
Sug-
gestions

Debits
and
Credits
Listed
and
Added at
Same
Time

Without a Burroughs the daily proof of posting would involve considerable time and labor, but by using the marker system together with the machine a big day's posting can be checked up in a few minutes and all anxiety on the part of the bookkeeper can be laid aside. A supply of the markers and fac-simile of forms suggested will be sent to any accountant writing on the letterhead of his firm.

A B E T T E R D A Y ' S W O R K

TRIAL BALANCE, BITTNER, HUNSICKER & CO, ALLENSTOWN, PA					
MONTH OF March, 1910					
DEBET	DEBET	DEBET	DEBET	DEBET	DEBET
500.00		1,1739.91*		31,352.66*	
544.00		404.30		606.40	
544.00		764.00		104.30	
544.00		4.400		700.50	
1,000.00		23.000		100.00	
653.00		45.00		150.40	
7.60			7,055.30*	5.00	
555.30		60.40		70.50	
	50.00*	87.75		22.00	
706.40		50.00		100.00	
264.00		7.00		50.40	
300.55		40.000		70.40	
377.60		606.40		23.30	
204.40		403.00		25.05	
260.50		60.40			3,054.60*
653.00		60.40		65.30	65.50*
43.20		1,000.40			
46.05		1,060.00		70.30	
130.00		503.00		36.66	
50.33		76.50		22.00	
66.40		400.40		60.30	
255.00		275.00		40.30	
270.60		208.60			208.67*
403.00		2,250.40		601.60	
65.50		3.00		505.40	
54.30		665.40		20.00	
	23,000.00*	706.50		766.40	
4.00		505.40		20.00	
200.00			55.00*	6.00	
250.40			400.40*	60.90	
603.00		506.00			3,615.407*
404.20		506.50			3,615.407*
103.00		509.30			
160.50		570.70			
504.2		54.00			
4.000		600			
65.40		430			
355.00		150			
	605.30*	1040			
360.66		60			
303.20		553.00			
653.0		442.00			
	605.30*	1,000.00			
33.00		3,090.40			
30.60		606.40			
223.00		707.50			
234.40			54.00*		
65.40		24.000			
	1,000.00*	54.20			
502.00		66.40			
560.50		20.000			
220.00		250.40			
250.50		23.00			
606.40		20.50			
1,1739.91*		31,352.66*			

FIGURE 11

This illustration shows how a trial balance may be taken on a regular nine-column machine, with a wide carriage and an eliminating button, from three to four times as fast as by hand.

CHAPTER XIV.

How a Trial Balance Can be Handled With Greater Accuracy and Less Trouble

"Calculation is the mind of business. A readiness in calculation gives a man great advantages over his less experienced neighbor; and many a man has brought his fish to a bad market from inability to calculate quickly and accurately."

THE monthly trial balance is generally dreaded by even the best of bookkeepers, not only on account of the tedious work involved in transcribing all the debits and credits to sheets and making footings, but also because they have visions of burning the midnight oil in order to find some fugitive error which has crept in despite their carefulness.

There are many safeguards against error in trial balances, but there is none that gives as great satisfaction to the bookkeeper as the one which assures him of accuracy as well as lightens his labor and mental strain.

There is no economy in transcribing debits and credits by hand and afterwards footing them by the head, when the work can be done in twenty-five to fifty per cent. less time, with little mental effort and with greater accuracy, by using a Burroughs Adding and Listing Machine.

There are several ways in which the machine can be used for taking off the debits and credits that make up the trial balance. There are three ways of taking off a trial balance with the regular style No. 9.

The first method is to insert a column-ruled sheet in the machine carriage and then turn through the ledger, taking off all the debits and adding and listing them in their proper column. When there is a credit the carriage is shifted over and the amount is listed in a column for credits but not added (see Figures 11 and 13). A little symbol, #, which is printed to the right of an amount, whenever the eliminating button is depressed in connection with it, indicates that the item has not been accumulated. When all the debits and credits have been taken from the ledger, the footing of the debits is printed

Trial
Balance
Dread

Three
Ways
to
Take
Trial
Balance

TRIAL BALANCE					
DEBITS	CREDITS	DEBITS	CREDITS	DEBIT	CREDITS
6 6 5 5 4	4 5 6 0 7	1 6 0 6 9 7 3	1 9 8 8 6 3 7 *	4 7 8 5 8 5 1	5 7 2 2 0 8 1 *
6 0 5 5	3 0 5 5 5	6 6 4 0	5 0 0 0	5 5 0 5 3	3 5 0 5 0
5 0 5 3	7 7 0 3 0	7 0 3 0	3 4 0 0	6 6 0 5 3	3 5 0 5 0
5 5 5 5 3	4 0 6 4 4	1 5 4 0	4 5 6 0	6 0 5 3 0	3 0 4 5 0
4 5 4 0 0	1 4 0 5 0	3 5 0 0	4 5 0 0	6 0 5 3	3 5 5 0
3 4 5 5 0	1 3 0 0 0 5 5	2 4 4 0	1 2 0 0	6 5 5 0	3 5 5 5
3 4 5 3	2 0 5 0	5 6 0 6 0	3 5 5 0 0	4 6 6 0	3 5 0 6 0
5 0 4 0 0	4 4 5 5 0	3 5 5 0 0	4 6 0 0	1 5 0 5 0 0	2 0 5 4 7 0
6 6 5 4 0	4 4 5 6 0	3 5 0 0	4 5 5	7 0 5 5 0	4 6 7 0
5 4 3 0 0	3 5 0 5 0	5 0 4 3	4 6 6 6	1 4 8 0 0	7 5 0 3
6 6 4 0 0	3 5 5 0 6	4 3 7 9 0	1 3 0 0	7 0 5 0	1 2 5 5 0
7 6 4	4 4 6 6 6	9 7 7 6 0	9 0 7 6	1 2 0 4 0 5 0	4 5 6 0 0
6 5 4 0 0	5 5 6	9 7 5 0	5 1 7 9	5 6 6 0 0	5 6 0 7 0
6 5 4 0 0	4 5 0 0	8 8 7 5 0	1 3 7 8	8 0 6 4 0 0	5 7 0 7 0
6 5 0 0 0	6 5 3 1	9 6 6 0 0	4 0 5 7	7 5 3 0 0	4 6 6
6 0 0 0 0	5 5 7 0	1 8 0 0 0	3 4 0 0		5 6 7 5
5 0 0		2 7 7 0 5	1 2 6 9		7 5 9 3 1 2
6 6 4 0	5 2 5	5 0 5 3	4 6 6 0	5 0 0 0 0 0	
6 0 5 0	4 4 0	6 6 5 3 0	4 5 6	6 0 5 0 0	3 5 5 0
6 5 4 0	4 5 6 0	6 6 5 3	4 6 0 6	1 4 4 4 0 0	4 4 5 6 0
6 5 4 0	4 5 6 0	5 0 0 0 0	4 5 6 6	4 0 3 2 0	3 5 0 6 0
6 5 4 0	4 5 0 0	6 0 5 3 0	3 5 0 5	1 6 5 5 0 0	8 0 0 4 0
5 0 0 0	4 5 5 0	6 0 5 3 0	4 6 0 0	1 7 0 4 5 0	4 6 6 0
6 5 4 0	4 6 0 6	6 0 0 0 0		1 6 5 0 0	5 6 0 0
6 5 4 0 0	4 5 6 6	6 0 5 3 0	4 5 0 6	4 7 4 2	6 5 5 5
8 0 0 0	4 5 5	6 0 6 4 0	4 6 6 0	4 6 7 0 0	4 6 0 0
7 0 6 4 0	4 5 5	6 5 5 3	4 5 6 0	2 4 4 0 0	5 7 5
7 0 5 0	4 3 1	6 0 5 4 0	4 5 0 6	6 0 0 0	1 2 2 5
7 6 0	4 0 6 0	7 0 6 4 0	4 5 0 6	6 4 4 0 0	4 6 6 0
7 0 6 4 0	5 5 5	1 3 0 4 0	2 4 5 0	3 0 5 3 0	9 3 6 3 7 5
7 6 0		1 3 0 4 0	8 7 4 0		
5 5 5 3		9 5 0 0	6 8 9 0	9 9 9 8 9 4 2	9 9 9 8 9 4 2 *
6 0 4 0		7 0 6 4 0	5 7 0 7		
6 5 3 0		6 5 3 0	5 7 7		
6 0 5 0 0	4 6 6	5 4 4 0	4 0 5 6		
6 0 5 0 0	4 5 0 6	1 0 4 5 0 0 0	3 5 0 6 0 0 0		
1 0 7 6 0	5 6 6	6 0 5 3 0	4 0 6 0		
1 2 2 2 0	2 3 4 0	5 0 4 3 0	4 5 0 6		
1 1 3 0 3	2 3 0 4	5 0 0 4 3 0	2 4 0 5		
3 5 0 0	4 6 0 6	7 0 6 4 0	4 5 0 6		
3 0 5 0	4 5 0 6	5 0 4 3 0	3 5 0 5		
4 4 4 5 0	5 6 0 9	6 0 5 3	4 5 6 6		
1 2 3 0 0	1 3 3 0	6 0 5 4	3 0 5 6 0		
1 2 4 1 1	1 2 6 0	6 5 0 0	5 0 0		
3 5 5 0	4 5 6	6 6 5 0 4	4 6 6 0 1		
€ 0	4 5 0 5	5 0 0 0 0	4 5 2 5		
1 6 0 6 9 7 3	1 9 8 8 6 3 7 *	4 7 8 5 8 5 1	5 7 2 2 0 8 1 *		

FIGURE 12

This sheet shows two columns of figures, debits and credits, added, listed and totaled simultaneously at three or four times the speed it could be done by the old hand method. This was done on a wide-carriage fifteen-column Burroughs.

and the credits are added with the carriage thrown back. Then the carriage is restored to printing position and the total is printed. This method is shown in Figure 13.

A second method consists of taking off the debits and credits after the manner outlined in Figure 14. In this case

DEBITS	CREDITS
*	
2 2.5 0	
1 2.5 0	
3.5 0	
1 2.4 0	1 2.5 0 #
6.5 0	1 0.0 0 #
5 7.4 0 *	3.7 5 #
	2 6.2 5 *

FIGURE 13

Some Practical Suggestions

the credits, which are usually comparatively few, are listed into the column of debits with the eliminating button depressed to prevent addition. When the transcribing has been completed it is an easy matter to pick out the amounts opposite the eliminating symbol, #, and add these on the machine with the carriage thrown

back. Then the carriage is restored and the total is printed as shown in the illustration.

A third method consists in taking off only the debit and credit balances. The eliminating button can be used in the same way as in the two preceding cases where all the debits and credits were taken into consideration.

These methods save more than half the time required by the old hand method, but there is even a quicker way than those just described that is only possible by making use of the large No. 15 Split & Normal Burroughs.

This wonderful machine enables the bookkeeper to add and list simultaneously the credits in one column and the debits in another. Thus, when he turns through his ledger and comes to a debit he sets it in the debit section of the machine keyboard and adds and lists the amount in

Saves Half the Time

Some
Practical
Sug-
gestions

DEBITS AND CREDITS	
	*
	3.50
1	3.50
	6.50
	4.55 #
	5.55 #
1	2.50
	6.50
	7.50 #
Debit	42.50 *
Credit	17.60 *

FIGURE 14

When it is remembered that items can be listed about three times as fast by a Burroughs as it is possible to list by hand and that the only thing necessary to make a footing of the machine list, no matter how long it may be, is to press a button and pull a lever, it will at once be apparent that a great saving of time can be effected.

The ideas embraced in the suggestions for taking off a trial balance with absolute accuracy and cutting the amount of labor in half, have been derived from everyday applications made by thousands of Burroughs users.

the debit column. When he comes to a credit, he sets it in the credit section and adds and lists it in the credit column. When the items have been taken in this manner from the ledger, all that is necessary to secure a printed total of both debits and credits is to press the total button and pull the handle. All debits and credits, or only the debit and credit balances, can be taken off at one operation with this machine and the two footings made simultaneously. This method is shown in Figures 12 and 15.

DEBITS	CREDITS
	*
	10.00
13.50	
4.45	3.75
	5.00
15.00	
	4.50
4.75	
37.70	23.25 *

FIGURE 15

CHAPTER XV.

Saving Time in Making Duplicate Records of
Bank Deposits

"The best rule for success in life that I have ever found is to do a little more than is expected of you."

"Whatever your position in life may be, whether in an office, factory, store, or workshop, do a little more than is expected of you, and you will never be overlooked, be the establishment large or small."

THE preparation of the bank deposit ticket is a part of the daily routine of any business concern that involves more or less listing, adding, and duplicating, and these operations take time.

The old method of preparing these tickets was to copy the amount of each check by hand, then foot the column of amounts and afterwards make a duplicate for the office files. By this method there is liability to error every time a duplicate is made. Where there are a number of items the time consumed in the preparation of the deposit ticket is considerable. It is impossible to add and list amounts mentally as fast as they can be added and listed on a Burroughs.

Time is saved by the mechanical method in two ways. First, the amounts are added and listed about five times as fast as it is possible to do the work by hand, and second a perfect carbon copy can be made at the same time the original ticket is prepared.

Time
Saved
in Two
Ways

In addition to these two time-saving advantages, all the amounts are printed and can be easily read.

When the work is done on the Burroughs, two blank tickets, with a carbon between them, are used. The items are then added and listed, taking the amounts direct from the remittances.

In cases where the daily bank deposits are made up of a large number of items, it is more convenient to use a sheet in connection with the machine and add and list the items in several columns.

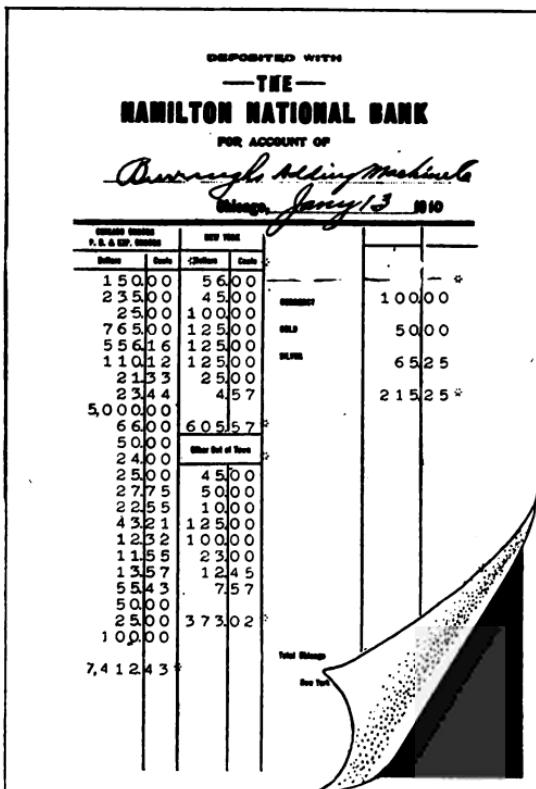


FIGURE 16

The top sheet is the original deposit ticket and the bottom is the carbon, both being made at the same time with the Burroughs. The carbon paper can be seen.

Figure 16 illustrates how the machine can prepare a slip deposit ticket with a duplicate.

Making up the bank deposit record is only one of the many items in the routine of a business house where adding and listing is necessary, yet the time that can be saved on this one item alone, commends the machine to favorable consideration.

A Real Advantage When the cashier desires to get his deposit to the bank at an early hour and to know that his duplicate is an exact copy of the items that have gone to bank there is no helper that will lend such valuable assistance as the Burroughs.

CHAPTER XVI.

How to Handle Monthly Statements with Greater Speed and Accuracy

EVERY day of delay in the preparation of statements means that they will get into the hands of customers late and that remittances will not come in promptly. The time consumed in making out statements consists of transcribing the items to the statement blank, entering the date and afterwards going over them and adding the amounts. Think of the time and labor saved when the dates and amounts are printed simultaneously and the footings are made in no time at all! To the bookkeeper who is accustomed to the old hand method this seems impossible and so it is, unless a Burroughs Statement Machine is used.

This machine permits the operator to take the dates, number of items and amounts from a ledger at one operation. It is not even necessary for him to insert a statement sheet. The statements come in rolls so that they can be run off one after the other for as many statements as are desired. In those cases where only dates and amounts are used the date is put in one section of the machine keyboard and the amount in the other. The handle is pulled once and both the date and amount are listed and the amount only is added. When all the dates and amounts for one account have been transferred to the statement in the manner just described, the total button is pressed, the handle pulled and the total of all the amounts is printed.

The dates and amounts having been transcribed on the statement, it is torn off and dropped into the ledger at the account from which the amounts have been taken and the edge is left projecting slightly above the page so that it will serve as a marker. In like manner all the

State-
ments
in Rolls

STATEMENT

L. S. BAUMGARDNER & Co.

WHOLESALE

DRY GOODS, NOTIONS AND FURNISHING GOODS

COR JEFFERSON AVE AND ST CLAIR ST

NEW YORK OFFICE
15 LEONARD STREET

TOLEDO OHIO Feb. 25 1910.

M John Perkins,

Sandusky, O.

DR.

APR.	1	2350
	3	4500
	6	6080
	8	1204
	10	1530
	15	5670
	25	4500
	30	1111

26945 *

CR.

MAY	3	200
	10	2500
	20	2500
	30	2500

7700 *

BAL. 19245 *

FIGURE 17

Statement made on the No. 15 Statement Machine, which prints months, dates and amounts at the same time. Dates appearing in red.

A B E T T E R D A Y ' S W O R K

STATEMENT			
BROWNWOOD, TEXAS.		Jany 5 1909	
M	John Smith,		
Bakerville, La.			
IN ACCOUNT WITH			
ADAMS GROCERY COMPANY			
WHOLESALE GROCERS			
PLEASE COMPARE THIS STATEMENT WITH YOUR BOOKS AND REPORT PROMPTLY ANY DIFFERENCES THAT MAY EXIST			
DATE	CHARGES	DATE	CREDITS
		*	*
1	Bal. 1 2 4.1 2	1	1 0 0.00
1	3.2 5	10	5 0.00
2	3.4 4	15	2 5.00
2	5.4 6	19	2 5.00
3	5.4 0	20	1 2.00
5	5.1 3	25	3 8.00
5	1 2 2 3	29	2 0.00
10	5 4.6 0		
12	3.3 3		2 2 5.00 *
13	5.4 5		
15	6.5 6		
15	6.5 0		
16	7.5 0		
18	5 0.0 0		
19	1 0.5 0		
21	3.2 0		
23	5.4 0		
25	4.5 0		
26	6.5 6		
28	6.5 0		
28	4.3 0		
28	3.5 0		
29	4.5 6		Balance
29	5.6 0		Due us
30	5.6 0		
30	6.1 4		1 4 3.2 1
31	4.5 6		
31	4.3 2		
Total	3 6 8.2 1	*	Total 3 6 8.2 1 *
MADE WITH A BURROUGHS ADDING AND LISTING MACHINE FOR EXPLANATION SEE OTHER SIDE			

FIGURE 18

Statement made on the No. 9 Statement Machine, which prints the days of the month and adds charges at the same time.

Some statements are dropped into the ledger opposite their respective accounts. When the adding and listing of the amounts has been completed, the bookkeeper turns to the first account and enters the name on the statement, which completes it.

But there is another important point just here that should not be overlooked. Since all the items taken from a customer's account have been added and listed on the statement, the total should agree with the ledger total. By making the comparison between the statement and the ledger totals when the names are filled in, the bookkeeper is enabled to check both his statement total for the items transcribed and to check up his ledger footing. This very important feature of the Burroughs method of making out statements is incidental to the method itself and does not require any extra time for the check. Besides, it enables the bookkeeper to get out his statements much more quickly and with far less effort than by the old hand method. From one to several days may be saved at the end of the month by using the Statement Machine.

Figures 17 and 18 indicate the nature of the work done by the Burroughs Statement Machine. Figure 18 shows a statement prepared on a regular No. 9 and Figure 17 shows the kind of statement that can be prepared on the larger size machine.

It must be remembered that these machines can also be used for the purpose of ordinary adding and listing of amounts, taking off trial balances, proving postings and many other every-day applications.

Our new 16-page booklet—"How Days and Dollars Can Be Saved" gives you a clear description with interesting illustrations of the Burroughs method of making statements. The tremendous saving of time and money will surprise you.

Booklet
Free on
Request

CHAPTER XVII.

Recapitulation of Daily Sales in a Retail or a Wholesale Store

"The man who retains his membership in the Don't Worry Club is the fellow who keeps machines to do his worrying."

A DAILY recapitulation of sales is of the greatest importance to wholesale and retail concerns because it furnishes the only means of ascertaining within a reasonable length of time the business that is done by departments and by clerks. A total of the cash and charge sales for the day indicates the amount of business that has been done, but it does not give a detailed analysis showing how much of that business was done by any one clerk or department. Perhaps one clerk made a good record, while another made very few sales, but this fact cannot be known by consulting a grand total of the sales made by all departments and all clerks. The great value to a business house of a daily recapitulation of sales by clerks and departments consists in the specific information concerning each department and clerk as well as the aggregate amount of sales.

Some of the advantages to the manager or proprietor when such a system of recording sales is used are as follows:

First—It enables him to have before him by noon on the following day a complete record of the sales made on the previous day. This record is detailed, giving every item of cash or credit sale. By comparing sales sheets for previous days with the current sheet he can ascertain whether certain salesmen have been coming up to standard, and if not, can speak to them at once and find out the reason. If it is a department that has fallen down, a consultation with the department manager may fix the cause.

Sales
Record
of Each
Clerk

Man-
ager's
Daily
Record
of Sales

A B E T T E R D A Y ' S W O R K

Recapitulation of Cash and Credit Sales by Clerks										Date Jan. 3, 1910.	
J. Ross & Co.		1st Clerk Number		2d Clerk Number		3d Clerk Number		4th Clerk Number		5th Clerk Number	
Cash	Credit	Cash	Credit	Cash	Credit	Cash	Credit	Cash	Credit	Cash	Credit
225	235	130	130	25	45	40	55	25	30	230	25
115	125	350	440	35	100	100	400	500	400	445	50
220	125	350	75	200	500	500	400	600	100	125	120
25	350	125	66	235	76	125	200	125	200	125	300
25	45	39	122	75	25	25	45	25	45	225	125
220	76	220	40	300	45	30	30	30	30	85	45
350	450	120	340	500	500	15	200	200	230	330	76
10	500	120	54	100	400	10	200	200	230	135	65
35	5	130	76	35	230	380	10	135	125	235	125
35	235	200	45	25	25	125	125	200	200	125	125
340	340	100	76	80	80	40	40	40	40	200	225
225	425	35	50	90	90	55	55	55	55	45	35
300	300	45	100	200	50	120	120	120	120	220	120
100	100	65	115	34	34	120	120	120	120	200	120
225	35	100	40	25	25	33	33	33	33	200	345
100	65	340	60	44	44	125	125	125	125	200	125
100	25	25	60	100	100	55	55	55	55	200	35
25	100	50	45	120	120	65	65	65	65	200	120
65	25	200	65	135	135	100	100	100	100	200	120
65	75	100	200	450	450	800	800	800	800	200	120
150	150	130	100	100	100	40	40	40	40	200	120
500	500	45	50	55	55	33	33	33	33	450	450
450	350	2169	1690	3201*	3201*	120	120	120	120	100	100
175	175	125	125	50	50	1974*	1974*	1974*	1974*	15	15
3025	1911*	2169	1690	3201*	3201*	240	240	240	240	204	204
						75	75	75	75	2897*	2897*
						2039	2039	2039	2039		
						3375*	3375*	3375*	3375*		

FIGURE 19

This sheet shows how the Cash and Credit Sales by Clerks may be summarized on a wide sheet with a Burroughs, increasing the accuracy, speed and neatness of the work fully 50 per cent.

Second—It gives him data from which he can prepare some practical suggestions a weekly or monthly comparative summary of sales. This summary, on which only the totals of sales by departments or clerks are entered, furnishes a concentrated record from which the total business, as well as the daily business, for a certain period can be seen at a glance.

Third—It has a good effect upon the clerks who know that a daily record of their work is being kept and consequently will apply themselves more diligently to business.

The application of this system involves the listing and adding of a great many small items. By this means the operator can prepare his recapitulation sheets by clerks and departments in the shortest possible time and with a great gain in accuracy.

Numerous wholesale and retail houses have appreciated this fact and after experimenting on various plans have installed the Burroughs Adding Machine, which has been found to be most effective for this kind of work.

The sales tickets are filed as they come to the cashier's office, either by departments or by clerks, according to the sheet that is to be prepared first. On the following morning the machine operator puts a sheet in the machine carriage and tabulates the sales items directly from the sales tickets. Each group of items corresponding to any department or clerk is designated by a number or letter at the top of the column of items.

In case a separate record is made of cash and credit sales (Figure 19), these can be transcribed to the sales sheet and footed at one operation by using the Split & Normal Machine. When it is desired to tabulate in this manner the machine is split. The cash items are taken from the cash tickets and entered in one section of the keyboard and the credit items are taken from the credit slips and entered in the other section. When all the items

Cash and Credit Items Listed Separately

A B E T T E R D A Y ' S W O R K

DAILY SALES REPORT									
L. MARSHALL & CO., BIRMINGHAM, ALA.		February, 7th to 12th, 1910.							
		Mon. Feb. 1st	Tues Feb. 2nd	Wed. Feb. 3rd	Thurs. Feb. 4th	Fri. Feb. 5th	Sat. Feb 6th	Department Store	%
1	4020	4863	4345	5440	5500	5040	4555		
2	5364	4650	5400	5655	503	4700	4555		
3	5470	4555	3550	5777	503	4700	4555		
4	2789	4433	5465	4770	3505	4700	4700		
5	5295	5543	6554	4808	5606	4988	5076		
6	4680	4467	3440	5430	6054	5055	5055		
7	5361	4543	3505	3707	6776	5076	5076		
8	4209	4778	4430	8088	6908	5430	5430		
9	4453	4524	4401	2555	6054	6054	6054		
10	4200	4626	4776	5600	5560	5600	5600		
11	5114	5071	4098	407	5700	4041	4041		
12	4240	5042	5422	4808	4760	3030			
13	4892	5321	4403	5054	6777	5055			
14	4451	4544	4550	5043	4777	5700			
15	6847	5466	5666	5888	5030	5980			
16	6140	5346	4005	6430	6065	4660			
17	3367	5467	4060	5066	5087	5707			
18	4488	4623	4623	6060	4035	3506			
19	4277	5466	4505	4043	4046	4046			
20	5126	5066	3489	3056	3708	6402			
21	4492	5005	6520	4550	3607	2484			
22	5088	4035	4456	3405	4708	4708			
23	4515	4060	5532	6077	5043	4681			
24	4534	3055	3555	6066	3606	5456			
25	4319	6066	5544	5707	4043	4566			
26	4796	4344	3505	3506	4067	6433			
27	4522	6055	5504	4220	6540	3578			
28	4923	5593	4404	4220	5595	4220			
29	4104	4044	4605	5554	4044	4044			
30	4863	5004	4807	4054	5077	5640			
31	4036	6870	5536	4707	5908	7722			
32	4083	3550	5998	4098	5066	5678			
33	4402	6604	5040	4430	5430	6489			
34	4163	807	5243	320	5320	7888			
35	4442	3404	4003	4505	4505	5011			
36	4644	7640	4003	5717	4560	5607			
37	4949	6055	3600	4050	5555	4050			
28	4441	5404	3908	3808	5030	6065			
39	4110	4055	6095	6077	4060	6066			
40	5574	4080	3044	5166	6151	5717			
	1,848,732	1,949,213	1,854,448	1,852,629	1,934,762	2,141,782			
Sales Change	1,848,732	1,949,213	1,854,448	1,852,629	1,934,762	2,141,782			
	75	51	68	60	200	70			
Total	1,849,488	1,949,722	1,855,166	1,853,292	1,936,762	2,142,488			
Cash Expense	1,847,511	1,948,686	1,854,507	1,852,200	1,935,707	2,141,381			
	197	104	66	129	106	110			
Total	1,849,488	1,949,722	1,855,166	1,853,292	1,936,762	2,142,488			
Cash Deposit	1,847,511	1,948,686	1,854,507	1,852,200	1,935,707	2,141,381			
	197	104	66	129	106	110			
In Drawer	51	68	60	200	70	138			
					Total Sales	11,581,652			
DAILY EXPENSE REPORT									
February 1st to 7th, 1909									
Express	102	Express	39	Refund	25	Salary	100	Express	50
-	-	-	-	Express	36	Express	29	Refund	25
-	50	-	60	Carfare	5	Carfare	5	Soap	6
-	25	-	5	Total	66	Total	129	Carfare	25
Carfare	12	-	-					Total	106
-	10	Total	104					Total	110
Total	197							Total	110

FIGURE 20

This Daily Sales Report gives, in condensed form, the story of the business activity of a store day by day. The machine makes such daily reports possible, by cutting down the labor, time and cost of getting the figures fully 40 to 50 per cent.

for a clerk or department have been listed and added, the two totals are printed simultaneously.

Some
Practical
Sug-
gestions

Figure 21 and Figure 22 show a sales record made out in its simplest form. On a sheet prepared in this manner, the clerk's or department's number is printed and the items listed in column form below it. The little symbol, $\#$, is an eliminating sign which indicates that the number "3" has not entered into the adding mechanism of the machine. It is printed at the same time the number is printed with one lever pull simply by depressing an eliminating button when the "3" key is depressed. The clearing star, $*$, is printed when the total button is depressed and the lever is pulled, and indicates that the machine is clear. The items are then added and listed in the usual manner.

Figure No. 23 shows the clerk's number and also the department letter. The "320A" is printed by Sales
Records
by De-
part-
ments

depressing the numeral keys corresponding to the amount and the department letter key "A," and pulling the lever. After making a record like this the sales by departments can be separated by grouping together all amounts opposite any department letter.

Figures 24, 26 and 27 are more elaborate. These illustrate the appearance of a sales record where department number, cost price and selling price, or cash and credit are recorded. The Burroughs fifteen-column Split & Normal Machine lists and adds both columns at one operation. In the case of cash and credit sales, the amounts on the cash tickets are entered in one section of the machine and those on the credit

DEPT	3 #
	*
	3.2 0
	4.1 2
1	1.7 5
1	0.4 5
	2.3 5
	3 1.8 7 *

FIGURE 21

A B E T T E R D A Y ' S W O R K

BY CLERKS		SALES RECAPITULATION				Friday Feb 26 th /10	
1*	4*	8*	11*	14*	17*		
.25	.35	1.35	1.24	.45	.35		
1.35	.50	5.00	1.35	1.35	1.35		
2.00	1.15	2.25	3.34	2.25	2.25		
2.25	1.20	3.00	2.25	.75	.75		
1.75	3.00	2.4	7.25	3.24	3.24		
1.45	3.15	.75	2.25	2.45	2.35		
2.00	.22	.20	1.35	4.00	1.45		
3.20	.76	.15	.45	1.25	4.00		
1.56	.50	1.35	2.25	.50	5.30		
.75	1.25	2.00	1.45	.25	3.45		
1.25	2.00	2.25	.50	.75	.50		
.45	2.10	1.35	3.25	2.25	.75		
.50	.75	3.23	2.00	.35	.60		
1.00	1.55	4.00	2.50	1.55	2.35		
3.25	2.00		3.20	3.00	3.00		
2.45		27.22*	3.00	2.10	5.00		
		20.03*			5.30		
25.36*		9*	25.28*	.15	1.45		
2*	*	1.35	1.8*		.10	.50	
.35	2.34	3.23		3.204*		1.75	
1.25	5.00	2.45	.35			43.25*	
2.25	1.34	1.50	1.46	.15*			
1.33	.50	4.35	.60				
.63	.25	2.25	.50				
.50	4.34	.75	.50				
2.25	3.45	.65	.50				
1.45		50	4.00				
3.25	17.44*	1.35	3.50				
.60		3.24	5.00				
.20		2.35	2.50				
.35	6*	.60	3.35				
.50	.35	.75	.87				
1.20	1.35	25.12*	3.20				
2.30	2.00		1.25				
	2.75	.10*	27.30*	.14			
18.04*		5.00			.35		
3*	3.10	1.35	1.3*		.50		
.45	1.45	2.25					
2.25	1.50	1.45	5.00				
1.35	.25	.75	2.00				
.50	2.20	2.25	3.50				
.40	1.45	3.00	4.00				
.65	.50	5.00	2.45				
2.25	.35	1.35	1.75				
1.33	1.35	.75	1.6*				
.50		5.00	5.00				
4.5		.35	2.20				
2.25	.75	1.55	3.00				
1.35	2.20	2.25	3.35				
.50	1.45	3.00	4.00				
.40	.50	5.00	2.45				
.65	.35	1.35	1.75				
2.25	.35	.75	1.6*				
1.33	1.35	5.00	5.00				
.50		.35	2.20				
4.5		1.55	3.00				
3.0	7*	2.35	4.35				
1.25	*	1.45	1.35				
2.00	.35	3.00	.25				
2.00	1.45	.25	1.0				
2.10	3.23	1.5	3.30				
	1.45	.55	5.20				
17.80*		3.00	.35				
	2.45	.35	.50				
	3.00	.29	2.25				
	2.40		3.00				
		3.115*	5.00				
	17.33*						
		3.115*					
			3.195*				

FIGURE 22

The Sales Report by Clerks can be handled in one-half the time it would take to do it by hand, and does not require any specially-printed forms.

CASH SALES BY SALESMAN	
5	11
*	
3.20 A	
1.25 B	
2.20 B	
3.00 F	
2.25 A	
1 1.90	*

FIGURE 23

tickets in the other section and a footing made of both sections simultaneously. Figure 24 shows how the machine can be used to list department numbers at the same time the cost price and selling price are added and listed. All three items are printed with one pull of the lever.

Some Practical Sug-
gestions

The sales sheets which have been prepared each day are filed and used at the end of the week to furnish the data for a comparative sum-

mary. Figure 25 gives an idea of this summary.

It will be noticed that the sales for each of the departments are recorded under the different days of the week and a total of the week's sales printed in the extreme right

Cross
Tabulat-
ing

DEPT	COST PRICE	SELLING PRICE
10	3.50	4.20
4	3.20	5.35
12	3.00	4.10
5	17.25	21.30
7	3.20	4.35
	30.15	39.30 *

FIGURE 24

hand column. All the departments have done a normal business except No. 3, which has fallen below average. This fact is clearly indicated on the summary. The total

WEEKLY SUMMARY OF SALES BY DEPARTMENTS

DEPT. NO.	MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY	SATURDAY	TOTALS
1*	31255	32540	31230	29557	31000	29955	185547*
2*	41540	40205	29677	28550	25000	44145	29117*
3*	27565	31000	28456	26060	28567	32255	173903*
4*	30000	28566	19567	25236	28331	41256	173956*
5*	51245	41344	41040	38556	36344	57346	265875*
6*	27444	31200	28678	28556	20635	37356	173869*
7*	32678	32045	35550	36300	30303	42747	209623*
8*	35450	35455	31056	28458	26203	43867	200499*
9*	41200	46456	39577	36458	35001	50133	248835*
10*	30567	28557	31250	31068	32500	46634	200576*
	348944*	347368*	316081*	3088829*	2938829*	425694*	2040800*

FIGURE 25

This illustrates a summary of department sales, showing the amounts of daily and weekly sales and the grand total of all sales.

amount of business for each day is indicated by the figures in the bottom row. Sheets similar to the sample and up to 18 inches in width and containing 12 to 20 columns, can be prepared on the Burroughs. When forms similar to this are desired, the machine is set to cross-tabulate and the items are added and listed in horizontal rows instead of the regular column form.

Some
Practical
Sug-
gestions

CASH	CREDIT
SALESMAN 1 4 #	
	*
2 4.2 0	3 1.2 5
7.8 5	9.6 0
5.2 0	6.5 0
1 1.3 0	1 4.2 0
7.5 5	7.3 5
5 6.1 0	6 8.9 0

FIGURE 26

DEPARTMENT 7 #	
CASH	CREDIT
3.5 0	*
1.5 0	4.2 5
	2.2 5
	1.2 5
5.0 0	7.7 5 *

FIGURE 27

If a little attention be given to the full page facsimile reproductions of actual sheets, a clearer idea of

A B E T T E R D A Y ' S W O R K

CASH SALES BY SALESMEN		CHARGE SALES BY SALESMEN		SUMMARY OF CASH AND CHARGE SALES
TICKET NO.	AMOUNT	TICKET NO.	AMOUNT	
	1*		1*	
	*		*	*
1	.50	2	.35	35.80
3	.60	5	1.45	37.09
4	7.00	6	3.23	50.05
7	.75	13	2.45	
8	4.60	14	2.35	122.94*
9	6.35			
.10	.45		9.83*	
.11	2.55			
.12	.65		2*	
.15	3.25		*	
.16	4.65	2	2.35	
.17	4.45	3	4.34	
		4	3.55	
	35.80*	.11	5.00	
	*	.12	1.00	
	2*		25.24*	9.83
1	.20			25.24
5	.35		3*	28.06
6	1.54		*	
7	3.00	4	5.00	63.13*
8	4.25	5	12.50	
9	5.65	9	3.50	
.10	6.45	.14	7.06	
.13	7.20			*
.14	1.45		28.06*	122.94
.15	3.00			63.13
.16	4.00			186.07*
	37.09*			
	.			
	3*			
	*			
1	.40			
2	.35			
3	1.25			
6	2.00			
7	5.00			
8	1.00			
.10	1.00			
.11	3.45			
.12	2.30			
.13	7.50			
.15	.76			
.16	1.34			
.17	3.25			
.18	2.45			
	50.05*			

FIGURE 28

Sales Recapitulation showing Cash and Credit Sales separately and summarized by Clerks, as made on a style 9 Split and Normal Burroughs.

the work as it comes from the machine can be obtained. Some Practical Suggestions
By making use of a daily sales recapitulation system and the Burroughs machine, the ordinary addition of sales tickets can be done in half the time required to do the work mentally, and in a fifth the time that would be required to add and list the records by hand.

The mere adding and listing of items is not the chief point of advantage, however. The great value of such a system lies in its comprehensive survey of facts as well as its detailed information.

Sales Recapitulation

The illustration, Figure 28, shows how a No. 9 Split and Normal Burroughs adding machine can be used by a merchant for recapitulating his cash and credit sales by clerks, (or departments, or both), at the same time recording the sales ticket numbers.

The first column is made up of cash sales by clerks Nos. 1, 2, and 3, showing the amount of each sale and the sales ticket number.

The second set of items are charge sales for clerks Nos. 1, 2, and 3 and show the items and sales ticket numbers.

The cash and credit sales totals for the three clerks are recapitulated in the third column and the sum of both totals thus obtained gives the grand total of sales for the day.

This form is only a suggestion of the possibilities in the Burroughs Sales Recapitulation System.

It can be applied both to large and small business houses in practically the same way as outlined in the illustration.

In case a concern doesn't care to include the sales ticket number with each sale, it can be cut out without in any way disturbing the operation of the machine or the tabulation of the sales amounts.

Individual Sales by Clerks and a Grand Total

A B E T T E R D A Y ' S W O R K

OLD BALANCES	NEW BALANCES	OLD BALANCES	NEW BALANCES	OLD BALANCES	NEW BALANCES
21277	24396	1,95342	217272	3,53775	3,82521
22550	3450	350	2250	12260	12561
3235	1500	3576	500	1825	2262
1155	2500	500	565		1400
5000	2500	3378	5011	12140	14675
2265	2500	7500	2522	12265	8276
21165	23575	5066	2250	12145	3755
3376	4576	1500	1500	15000	15000
1288	1500	1500	1500	21145	
22356	3350	6250	500	12344	12500
12250	13255	3386	7524	3253	3500
4255	12250	2423	1250	4345	5000
2250	7576	3250	3355	8656	9667
2355	2565	13255	3650	7075	7134
3450	.4550	13255	15650	32145	35000
2145	2500	5000	5000	22546	22845
22250	2500	2500	2500		
3340	3500	3250	3250		
15365	3150	13250	13250		
122500	17544	17544	17544		
15454	15075	15075	15075		
3276	6500	6500	6500		
11278	7500	7500	7500		
22350	13250	13250	13250		
10000	1500	1500	1500		
3250	12500	12500	12500		
4566	13565	13565	13565		
6500	7522	7522	7522		
2265	3212	3212	3212		
12250	13250	13250	13250		
5450	2214	2214	2214		
1,95342	2,17272	2,17272	2,17272	3,82521	3,82521
RECAPITULATION					
				Old Balances	5,90529
				Sales	6,8250
				Credit Cash Book	7825
					6,66604
				New Balances	6,13161
				Made, Returned	12131
				Dr. Cash Book	41312
					6,66604

FIGURE 29

Showing a Balance Sheet made on the No. 15 Split and Normal Burroughs. A column of old and new balances are added and listed simultaneously with this machine.

CHAPTER XVIII.

The Daily Ledger Balance for a Commercial House

"Work for a raise—a raise is your employer's confidence, trust, appreciation—then the monetary end will get in line of its own accord"—if your employer hasn't any confidence, trust, or appreciation: get another employer.

ABOUT ten per cent. of the accounts of the average concern change during a single day's business.

This percentage, however, suffices for a correct balance. If there are, say, five hundred accounts and only fifty act during the day, the daily balance can be obtained by taking only the fifty into consideration.

This simplification of an otherwise tedious job is accomplished by a Balance Column Ledger and the Burroughs Bookkeeping Machine.

When the bookkeeper posts to an account, he extends the balance and places a strip of paper or a Burroughs Marker to mark the account to which he has posted, as shown in Figure 31.

When the posting has been completed, the "previous" and "current" balances are taken from each active account and added and listed on the No. 15 Split and Normal Machine. The "previous" balance is entered in the left hand section and the "current" balance is entered in the right hand section. One pull of the handle adds and lists both amounts. When all the balances have been taken off, the two totals are obtained by depressing the total button and pulling the handle. The machine work is shown in Figure 29.

The advantage of the large machine is, that it permits the operator to add and list both the old and new balances at the same time, thus making it unnecessary to run through the ledger twice to transcribe the balance. The regular No. 9 Burroughs Adding and Listing Machine,

"Previous" and
"Current"
Balances
listed at
once

A B E T T E R D A Y ' S W O R K

OLD BALANCES		NEW BALANCES	
*	205396*	493373*	235120*
21277	205396*	24396	513251*
22550	7500	22546	22845
32355	5066	7655	5000
11555	6250	3455	4500
50000	3388	1255	22565
22655	21255	2500	50000
12550	24235	23575	3355
13255	42245	23575	3650
13255	32500	1500	15650
13255	13255	350	14565
13255	13255	0	10000
13255	13250	0	2250
13255	7576	7576	3255
13255	2565	4250	4250
13255	4550	15000	15000
13255	2500	2500	2500
13255	3500	0	4756
13255	3150	3500	2121
13255	1754	15074	4675
13255	15165	15165	15165
13255	6500	3620	3620
13255	7500	0	2500
13255	7523	14675	14675
13255	13250	13250	13250
13255	2800	0	2800
13255	3840	0	3840
13255	12561	12561	12561
13255	12500	12500	12500
13255	12260	12260	12260
13255	11825	11825	11825
13255	12140	12140	12140
13255	12265	12265	12265
13255	121145	121145	121145
13255	21145	21145	21145
13255	12344	12344	12344
13255	3253	3253	3253
13255	4345	4345	4345
13255	8656	8656	8656
13255	7075	7075	7075
13255	32145	32145	32145
13255	493373*	493373*	493373*
205396*	493373*	235120*	513251*
		RECAPITULATION	
		Old Balance:	5.90529
		Sales	6.8250
		Cr. Cash Book	7.825
			6.66604
		New Balance	6.13161
		Mdecr. Returned	12131
		Dr. Cash Book	41312
			6.66604

FIGURE 30

Showing a Balance Sheet made on the regular No. 9 Burroughs. This machine cannot do the work quite as rapidly as the larger style, No. 15, since it is necessary to add and list the old balances first and then the new balances.



FIGURE 31

Burroughs' Markers are used to indicate accounts affected, so they may be referred to easily.

on the other hand, can be used in the operation of this system, as shown in Figure 30. After all the postings have been made, the sheet is inserted in the machine and the old balance on each account is added and listed in the proper columns; then the bookkeeper runs through the ledger a second time for the new balance on each account, adding and listing them in the proper columns.

The machine insures accuracy and speed in the handling of these items, which means that an old and new balance sheet can be taken off in about the time it would take to put down half the figures by the long hand method.

This system will be cheerfully demonstrated in your office free of charge, and no obligation, if you say so on your letterhead.

100%
Time
Saved

A B E T T E R D A Y ' S W O R K

CHECK NUMBERS	AMOUNTS
4 2 3 4 5	1 2 5.5 0
4 2 3 5 7	4 3.6 5
4 2 4 3 1	5 4.7 5
4 2 4 5 5	3 5.5 5
4 2 4 7 5	4 5.0 0
	3 0 4.4 5 *

FIGURE 32

DAY OF MONTH	DEPOSITS
1 2	2 5 0.0 0
1 5	1 2 5.6 5
1 8	3 3.7 5
2 0	7 5.0 0
2 1	6 5.4 5
	5 4 9.8 5 *

FIGURE 33

CHAPTER XIX.

An Easy Way of Reconciling Bank Balances.

"Isn't it true, if you look over the men who have gone forward in your business, that they were the ones who got the most good work done in the least possible time?"

ACCOUNTANTS connected with commercial houses, railroads, insurance companies, manufactures, municipal offices and many other large concerns, have occasion every month to reconcile the check book balance with the bank balance. On account of the nature of a check book it is difficult to turn through the stubs and foot the deposits and outstanding checks mentally. If the amounts are set down on a sheet of paper and afterwards footed, so much time is consumed that the process becomes very laborious.

Old Way
Laborious

The best, most accurate and quickest way of taking off these amounts is to use a Burroughs Split & Normal Machine, because this machine is capable of listing both check numbers and amounts at one operation, taking a total only of the check amounts.

There are several ways in which this kind of work can be done on the Burroughs with a great saving of time. One method consists, first, of adding and listing the cancelled check amounts. The checks are then arranged in numerical order and the amounts are checked against the amounts on the check book stubs. Blue pencil marks are made opposite the amounts on the check book stubs which correspond to the cancelled check amounts. After this operation has been completed the unmarked amounts on the check book stubs will represent outstanding checks. Then the accountant again takes the machine, adjusts it to add in one column and number in another, inserts a sheet in the carriage and runs off the unmarked amounts together with the corresponding check numbers. The machine transcribes both of these, as shown in Figure 32, at one operation, and prints the total in the amount column only. When all the outstanding check amounts and

Some numbers have been transcribed to the sheet, the total of the Practical amounts can be printed by simply pressing the total button and pulling the handle.

Sug-
gestions
After the check amounts have been added and listed, the deposits are added and listed in the same way, setting down the day of the month if desired at the same time the amount is entered. A sample of this work is shown in Figure 33.

Then the previous month's balance plus all deposits, minus the total of cancelled and outstanding checks, should agree with the current bank balance. The No. 15 Split & Normal machine does the above work more quickly than can be done on any other machine and the feature which enables the operator to set down check number and amount side by side, assures him that the amounts have been entered opposite their respective check numbers.

Use for
a Nine-
Column
Machine

A method, where a No. 9 machine can be used, is to run off the returned checks the same as on the No. 15, and check against the amounts on the check book stubs. Then add and list first the amounts of the outstanding checks and then list the numbers opposite their respective amounts. The deposits can be listed at a third operation.

Still another method is to check off the returned check amounts and add and list the checks in the usual way. Then add and list the unmarked amounts on the check book stubs which signify outstanding checks. Whenever a deposit is found, set in the amount with the eliminating button depressed and after the total of the outstanding checks has been made, go back over the list and add the amounts indicated by the eliminating symbol, #, which in this case will be the deposits.

The quickest and most satisfactory method, however, is the first one described, where the No. 15 Split & Normal machine is used.

Great
Saving
By applying this system the labor attendant upon reconciling a bank balance is reduced to about one-fourth the amount usually required to do the work by the old hand method.

CHAPTER XX.

Statement of Operating Expenses and Earnings

"How can I find work for that machine?" says the most successful man. They make work, because then they can take time to do the things that have never been done before. They remedy the sins of omission.

COMPARATIVE weekly, monthly, and yearly statements of operating expenses and earnings, are of great value to the manager and board of directors. The manager who is acquainted with the average of expense and earnings in all departments is in position to ask for an explanation of an increase in expense or note and encourage any department in which the earnings run above the average. The cost of preparing such reports by the hand method often influences managers to do without a definite knowledge of departmental expenses and earnings. The economy resulting from handling details on the Burroughs makes a monthly or even a daily report possible, and so enables the manager to correct wrong tendencies before they result in losses.

We show in Figure 34, a simple method of keeping track of, and making comparisons of, operating expenses and earnings. This particular form shows the work in an insurance office, but can be readily made applicable to any other line of business.

The form is run through the machine three times for each month. The first time for the head office expenses; the second time for the expense items of the agencies; and the third time for the totals of both.

From the expense accounts in the ledgers all expense items of the head office for the year 1906 are added and listed opposite their respective accounts. The spacing device is adjusted to give sufficient space between the different items. The expense items for the agencies for 1906 are added and listed in the second column and the totals for both the home office and the agencies in the third column. The operation is repeated for the year 1907.

Average
of
Expense
and
Earnings
Help
the
Manager

Analysis and Comparative Statement of Expenses for Month of FEBRUARY 1907.

	HEAD OFFICE	AGENCIES	TOTAL
Commission	{ 190 6 190 7	4,444.430 5,066.00	4,994.930 *
Bonus	{ 190 6 190 7	345.00 3,000.00	51,011.00
Physicians' Fees	{ 190 6 190 7	77.60 56.60	53.260
Salaries	{ 190 6 190 7	1,908.00 1,300.00	3,238.00
Printing	{ 190 6 190 7	55.00 56.00	100.00
Advertising	{ 190 6 190 7	77.00 57.77	564.300
Books, Periodicals, etc.	{ 190 6 190 7	75.00 67.00	75.200
Taxes, Licenses, Fees & Fines	{ 190 6 190 7	2,033.330 1,044.00	5,088.330
Valuation Fees, etc.	{ 190 6 190 7	4,055.00 3,550.00	4,621.00
Rents	{ 190 6 190 7	6,099.00 5,660.00	11,165.00
Stationery	{ 190 6 190 7	4,055.00 3,550.00	9,715.60
Postage, Bank Exchanges, etc.	{ 190 6 190 7	1,022.00 8,999.00	8,131.90
Traveling	{ 190 6 190 7	1,011.00 8,990.00	1,699.88
Solicitor's Charges	{ 190 6 190 7	1,220.00 3,000.00	577.50
Light and Fuel	{ 190 6 190 7	122.00 33.00	578.80
Furniture, etc.	{ 190 6 190 7	89.00 70.00	188.00
Express and Freight	{ 190 6 190 7	77.00 67.80	145.470
Telephone Rent	{ 190 6 190 7	60.88 66.00	106.43
Telegrams and Telephones	{ 190 6 190 7	60.77 50.00	627.37
Expenses	{ 190 6 190 7	6,077.00 5,600.00	10,632.70
Total for Month of	{ 190 6 190 7	50,756.75 46,858.37	205,308.08 *
			13,912.900
			185,987.37 *

FIGURE 34

In this way the work is done in about one-half the time required by the hand method, and in addition the sheet presents a much neater appearance than it would if prepared by hand.

CHAPTER XXI.

Some Cost System Suggestions

IN FOUR PARTS

The short-sighted man says: "I haven't any use for it," and he thinks he has saved the price by "getting along without it." Eighty-five thousand users say he is wrong.

MANY manufacturers still depend on their balance sheets to determine costs and on their competitors for selling prices.

On the one hand, a balance sheet gives them little opportunity to know what they are paying for, as they take for granted that every operation through which their product has passed has been handled at the least cost of time and material. On the other, their competitor's prices are no criterion of what they should charge.

Balance
Sheets
Not
Com-
plete
Enough

This is veriest guess work.

"The manufacturer," as a great Chicago merchant well said, "can afford to neglect nothing that will aid in the accuracy and ease with which his cost of production is to be determined. Here is a matter in which guess work will not do, and where a fraction of a cent, in the ultimate findings, is of serious moment."

Fraction
of a
Cent is
Vital

An interesting illustration of the practical value of a cost system as compared with the balance sheet, was the experience of a young Chicago concern which manufactured a line of specialties. A large portion of the product was "regular," i. e., could be put through the factory as a stock requirement. A certain proportion, however, was built on special order.

Third
Partner
Insisted
on
Know-
ing
Cost

This firm started in business with a capital of \$50,000. The first year of their business existence was very satisfactory and the net profits figured in the neighborhood

Some of \$35,000. Two of the three partners were more than satisfied with this result and were willing to "Let well enough alone." The third partner, however, was not satisfied and wished to know more about how and where they made this money. He prevailed on his partners to install a cost system. The following year they found that while their profits were about the same as the previous year, on their regular goods their cost system showed them they had made a profit of over \$50,000, whereas on their specially manufactured product there had been a dead loss of nearly \$15,000. Thus, while the business apparently was earning a good profit, in reality there was a large leak which they had not known anything about.

It so happened that in this particular line there were only three concerns. This young concern, with the information gained through their cost system, the following season made an extra effort to get the regular business, and by judicious bidding, threw most of the special work into their competitors' hands. Within a year one of these competitors was obliged to go out of business and the other competitor, realizing that in some way the younger concern had the best of the argument, made approaches and a combination was formed, so that today these three young men practically control the entire market in their particular line.

So much for one experience, which could be duplicated from the history of many going concerns.

The average manager, however, approaches the matter of installing a cost system from the wrong angle—not wanting to know that any of his processes or lines of product are unprofitable. He looks on system as "red tape" when in reality "red tape" is not system at all, because a system does not clog, but expedites.

Any executive should first determine what are the greatest divisions of expense, then arrange to get an accurate line on exactly what makes up those divisions. Generally he will find the two main divisions to be time and materials. He must know whether he gets all of the time and materials he pays for; and then, to what particular kinds or items of his product all of this time and materials are charged.

Of course there is then the item of burden, administration, factory and selling, to be taken care of, with as fine a subdivision as he may desire. It is not the object, nor is it desirable, at this time to go into cost keeping as a system, but the following pages of this chapter contain a few suggestions in line with good practice, and the development of the time, work and worry saving qualities of the Burroughs in connection with cost keeping.

PART I.

Figuring the cost of day labor involves a great amount of addition. The number of hours and the amounts of earnings for each day in the week must be transcribed from the clock or time cards to some suitable sheet and then added. This operation necessitates three separate processes when the old mental method is used. First, the items must be listed; second, the time columns expressed in hours and fractions of hours, must be added; and third, the amount column must be added.

Figuring
Day
Labor

When a Burroughs Cost Keeping Machine is used, the number of operations is reduced to one and the time required to do the work is just about one-fourth the amount required when the hand and mental method is used.

The reproduced facsimile of a day labor sheet shows the daily record of nine workmen for one week. (Figure 35.)

Some
Practi-
cal Sug-
gestions

JOHN JONES & CO. PITTSBURG, PA.		Day Labor			Week Ending Nov 16	
Dept. No 10		201*	204*	207*		
Number	Rate	20*	26*	16*		
10½	210	10½	273	12½	200	66%
10	200	11	286	11½	188	59%
16½	330	12½	332	10	160	65%
11½	235	9½	241	9½	148	67%
8½	165	10	260	13	208	67%
9¾	195	14½	371	7½	120	67%
6 6¾	1335*	67%	1763*	54	1024*	64
		202*	2056*		208*	65
		22*	27*		30*	67
						590*
						12269*
8¾	193	14	378	11½	345	
11½	248	13½	365	9½	293	
12½	275	11½	304	12	160	
7¾	171	10½	284	8½	255	
10	220	8¾	236	10	300	
9½	209	9½	257	13½	398	
5 9¾	1316*	67½	1824*	65	1951*	
		203*	206*		209*	
		24*	10*		12*	
11½	276	10½	103	10	120	
12½	294	9½	95	11½	141	
9¾	234	14½	148	10½	126	
10	240	11½	113	9½	111	
8½	204	15	150	12½	150	
13½	330	6½	65	13	156	
6 5¾	1578*	67½	674*	67	804*	

FIGURE 35

Cost sheet showing addition of rates and earnings.
Both sets of items are added and listed simultaneously.

A sheet similar to the one illustrated by the reproduction is inserted in the machine carriage and the first two items opposite "Number" and "Rate" are taken from the clock or time card and printed on the sheet with the eliminating button depressed, which prevents the amounts being added.

Then the items "10½" and "2.10" are set into the machine. The "10½" is set into the left hand or hours and fractions section and the "2.10" is set into the right hand or amount section, and by one pull of the handle both amounts are added and listed as shown in the reproduced form.

After the items on a workman's clock or time cards have been added and listed—a total is taken which, in the case of the first group of items, shows the total time put in by workman No. "201" during one week and his earnings at the rate of 20 cents per hour.

The total amount of money earned can be proved by multiplying the total time by the rate per hour. This method of checking the work is easier and quicker than to go over the items and check them by calling back. It is also a more accurate check because it is done by an independent process which eliminates the liability of making the same error twice, of which there is a chance when the calling back system is used.

The recapitulation shows the total number of hours for all the workmen and their total earnings.

The Burroughs method of taking off day labor items as outlined above has a number of advantages among which are:

First, the record is neatly tabulated on sheets.

Second, the work can be done in less time and is more easily proved.

Third, the day labor sheet serves as a check on the pay roll.

Fourth, the sheets can be filed away for permanent record. There are many other advantages which can be appreciated by the cost keeping department only, when the Burroughs Cost Keeping Machine is put into actual operation.

PART II.

When it is desired to find the cost of labor by jobs, it is necessary to make use of job tickets on which are recorded, among other things, the workman's name or number or both, the job number, the rate and the amount of time consumed by the workman either in completing, or partially completing, the job.

When the job tickets are turned in to the cost department they are sorted by job numbers, all of the same numbers being grouped together. The time and amounts of earnings are then added and listed by the Burroughs Cost Keeping Machine.

Some
Practical
Sug-
gestions

Proof

Recapit-
ulation

Labor
Costs
by Jobs

Some Practical Suggestions

JOHN JONES & CO
PITTSBURG, PA.

Labor Cost by Jobs, Showing Hours and Amounts

Number	234*	236*	238*	240*
10½	210	10	160	10½
8½	165	9½	148	12¾
16½	330	13	208	10½
8¾	193	7½	180	126
12½	275	11½	141	10
10	220	10½	126	120
11½	276	9½	111	156
15	150	13	186	7½
12½	150	14½	371	171
8½	255	10	260	64½
9¼	148	12½	532	1178*
8¾	165	11	286	241*
10	300	10½	273	10
14 1½	2837*	9½	209	300
		10	220	255
	235*	7¾	171	7½
	*	11½	248	120
1 3	208	8½	193	148
9½	148	12½	332	330
7½	120	9½	95	16½
9¾	293			235
13 ¾	398	820½	4325*	12½
11½	141		10	275
12½	150		12	10
13	156		11½	13½
10½	284	14	378	345
11¼	304	13½	365	9¾
12½	200	10½	284	13½
10	160	8½	236	398
12½	275	9½	257	12½
7¾	171	15	150	200
10	240	11½	113	11½
13¾	330	10½	103	13½
178½	3578*	92½	1886*	112½
			7¾	2910*
			12½	
			11½	
			275	
			248	
			275½	
			5519*	
			275¾	

FIGURE 36

Cost Sheet showing hours worked and earnings. Both items are added and listed at the same time on the Cost Keeping Machine.

As shown in Figure 36, the job number is printed with the eliminating button depressed in order to prevent its being added in with the amounts. The first two items are placed in the machine. The "10½" is set in the left hand or hour and fraction section and the "2.10" is set into the right hand or amount section. Then by pulling the handle once both the time and amount are added and listed.

**Time
and
Cost
Ob-
tained
Quickly** When all the items under any one job number have been added and listed in this manner, a total is taken of the time and amounts. These two totals show the amount of time that has been consumed on the job and the total cost of the job.

The tickets can then be sorted by workmen's numbers and the time and amounts added and listed. In this way the total time and earnings of each workman can be obtained.

The Burroughs Cost Keeping Machine enables an operator to add and list amounts like those indicated on the form in about a fourth the time ordinarily required to do the work by hand.

PART III.

In order to keep a record of the cost of material for each job it is necessary to issue an order for every lot of material taken from the stock room. On this order is recorded the job number, the amount of material and its cost.

There are many cases where one job will require several lots of material for its completion, in which event there will be a number of requisitions made. And, as a general rule, only a part of the material required to complete a job is taken from the stock room on a single requisition. This necessitates a number of requisitions, which are identified with one another by a common job number.

The orders are turned into the cost department, and after being sorted according to job numbers, the cost on each order is added and listed on the Burroughs Adding Machine.

As shown in Figure 37, the job numbers are printed with the eliminating button depressed in order to prevent them being added in with the amounts, and then the amounts under each job number are listed and added.

When a record of this nature is kept, the exact cost of any product can be ascertained. In the first place the labor tickets, on which the job number is recorded, will indicate the cost of the labor for any job, and the orders or requisition tickets will give the cost of the material.

Thus, suppose three men worked on job number "342" for which two requisitions for material are made, both

Some
Practi-
cal Sug-
gestions

Material
Cost by
Jobs

Exact
Cost
Can be
Ascer-
tained

Some
Practical
Sug-
gestions

JOHN JONES & CO. PITTSBURG, PA.	Material Costs by Jobs			
Job No.	234*	236*	238*	241*
1354	10	5000	150	
4467	236	3450	35	
134	578	535	4	
98	500	225	2	
50	4475	35	678	
6500	1443	760	550	
435	500	890	5025	
34	60	210	6900	
126	175		225	
541	900	11105*	25	
64	250		48	
38	575	239*	1555	
500			4575	
14749*	9708*	500	500	
235*	837*	2500	1500	
12	345	5089	35	
2201	400	54	650	
455	501	7	20884*	
579	18	500	8428	
460	50			
500	689	9332*		
1685	950		11	
225	3061	240*	235	
535	750		450	
100	7500	1000	750	
4	45	65	563	
475	765	9	90	
7068*	15068*	1000	876	
		550	1650	
		2624*	4625*	

FIGURE 37

Job Sheet showing the cost of material for each job.

lots of which are passed in rotation through the hands of the three workmen who perform separate operations on it. Workman No. 1 puts in $9\frac{1}{2}$ hours at 20c. per hour on the first lot of material and $8\frac{3}{4}$ hours at 20c. per hour on the second lot. Likewise, workman No. 2 puts in $.8\frac{1}{4}$ hours at 22c. per hour on the first lot, and 9 hours at 22c. per hour on the second lot. And workman No. 3 puts in $6\frac{1}{4}$ hours at 15c. per hour on the first lot and $7\frac{3}{4}$ hours at 15c. per hour on the second lot.

Each of these workmen makes out labor tickets with time and rate and the job number "342." After the tickets have been properly checked by the time keeper, they are turned into the cost department.

The orders for the first and second lots of material have also been turned into the cost department and on each order is recorded job No. "342." The value of the first lot of material is \$12.90 and of the second lot is \$6.75.

Labor Cost	Material Cost	Some Practical Suggestions
Job Number	Job Number	
3 4 2 #	3 4 2 #	
9 1/2 1.90 *	1 2.90 *	
8 3/4 1.75	6.75	
8 1/4 1.82		
9 1.98 Mat'rl Cost	1 9.65 *	
6 1/4 9 4		
7 3/4 1.16 Labor Cost	9.55	
49 1/2 9.55 * Total Cost	29.20 *	

FIGURE 38

Showing how labor and material cost for a job are calculated.

Now suppose 100 parts have been made from these two lots of material, it is evident that all the cost accountant must do to find the cost of these 100 parts is to sort the labor tickets for job "342" from the others and add and list the amount of earnings on each, and combine the grand total of these amounts with the cost of the material.

The Burroughs Machine is used to advantage for the additions. The work on the above problem, which is exceedingly simple, but which serves to illustrate the principle, is shown in Figure 38.

The labor involved to do a large amount of work of the nature described above by the mental process, would make the cost system almost prohibitive on account of the expense, but by the aid of a Burroughs Cost Keeping Machine many details similar to the above can be handled in a short time and with a reduced clerical force.

Bur-
roughs
Reduces
Ex-
penses
of
System

PART IV.

Some There are numerous multiplications in connection
 Practical with cost-finding, among which are those for arriving
 Sug- gessions at the total cost of a number of pieces at so much per
 hundred.

Finding Cost of Pieces Thus, if it is required to find how much 3467 pieces would cost at \$.73 per hundred, the 3467 is multiplied by 73, and the product, 25.3091 is pointed off four places; two of the places corresponding to the two decimals in the \$.73 and two additional places because the price \$.73 is by the hundred instead of by the unit. In this manner the result, \$25.31, is obtained.

There is a multitude of problems of this nature that are frequently encountered in cost-finding. When they are worked out mentally an unnecessary expenditure of time and labor is wasted because the Burroughs Adding

NUMBER OF PIECES	COST PER 100		TOTAL COST	
	\$		\$	
2250		73	16	4250*
1275		125	15	9375*
22535		35	78	8725*
655	16	45	107	7475*
500		750	37	5000*
1500		365	54	7500*
3500		225	78	7500*
33755		24	81	0120*
4500	1	37	61	6500*
5000		86	43	0000*

FIGURE 39

The products in this example are obtained by making the multiplications with the carriage thrown back. The carriage is then restored to printing position and the products transcribed to the third column as shown in figure

Machine can do this kind of work three times as fast as it can be done by the mental process.

The ten problems in Figure 39 were worked out on the Burroughs, exactly as reproduced, in 1 minute and 20 seconds.

If these same problems are worked out mentally and the time required for the calculation is compared with the Burroughs method, and the neatness and compactness of the work is taken into consideration, the advantages of using a machine will be very pronounced.

In large factories where an extensive cost system is maintained, it is very desirable to cut down the clerical force as much as possible and also to reduce to a minimum the time required to handle the detail. Such multiplications as outlined above are purely detail work, which can be handled much more rapidly and accurately by using a Burroughs.

By applying this method, one good operator can do as much work as three clerks where multiplications are involved. This saving alone should commend the system to every cost-keeper.

Space forbids further detail here; but in our new 128-page book—"Cost Keeping Short Cuts" you'll find a clear and carefully prepared discussion of cost-principles and their application to modern business. Shall we send you a copy?

Some
Practical
Sug-
gestions

Bur-
roughs
Triples
Clerk's
Effi-
ciency

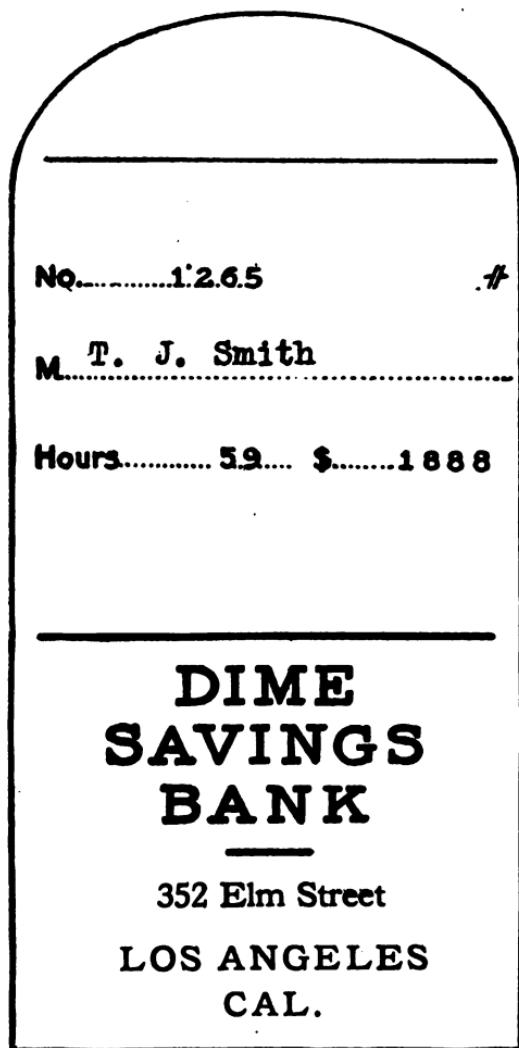


FIGURE 40

Showing how the Burroughs can print the workman's number, time and earnings on a pay envelope.

CHAPTER XXII.

A Simple Pay-Roll System That Saves Time
and Work

THE old way of making up a pay roll by writing down all the names and amounts by hand and afterward footing and checking back the amounts mentally takes a great amount of time. Generally speaking, there are three parts to a pay roll, all of which must agree in respect to amounts of earnings. The three are, the clock or time-card amounts, the pay-roll sheet amounts, and the total cash taken from bank. In the case of the first two, much listing and adding is necessary.

When the work is done by hand there is not only more time consumed, but in checking back item by item, there is liability to error. The work is accurately done and the time required to do it is diminished when the amounts are added and listed on the Burroughs.

The principle of the Burroughs method of making out pay rolls is as follows:

The workman's time and rate are extended on the clock or time cards, and the amounts are then added and listed on a pay-roll slip or sheet, as the case may be. The time cards are turned over, one by one, like checks, and the workman's number and amount of earnings are entered on the pay-roll sheet. The Split & Normal machine adds and lists the numbers and amounts at one operation.

The listing can be done on the Burroughs in about one-fourth the time required to do it by hand. The totals are taken, both of the number column and the amount column, simply by pressing the total button and pulling the handle. The total of the amount column will indicate the amount of money necessary to pay off the men, and the total of the number column will serve as a check, which

Three
Parts of
Pay roll
Must
Agree

Bur-
roughs
Pay-roll
Method

Some is used to advantage later on. Figure 41, reproduced Practi-
cal Sug-
gestions below, will give an idea of how a pay-roll looks when it
comes from the machine.

NUMBERS	AMOUNTS
	\$ *
1 2 4 5	2 2.4 5
1 2 4 6	1 8.5 0
1 2 4 7	1 9.4 5
1 2 4 8	2 2.3 4
1 2 4 9	1 3.5 6
1 2 5 0	2 5.0 0
1 2 5 1	2 3.5 5
1 2 5 2	2 2.7 5
9 9 8 8	1 6 7.6 0 *

FIGURE 41

Amounts and Numbers Listed at One Operation As soon as the numbers and amounts have been taken from the time cards and added and listed on the pay-roll sheets, it is desired to print the workmen's numbers and amounts on the pay envelopes. (Figure 40.) If this is done by hand, it is necessary to add the amounts afterwards and check back the numbers, to see whether the correct amounts are opposite their respective numbers. With the Burroughs in use, neither of these processes is necessary, since the machine is capable of listing the amounts and numbers on the envelopes at one operation and accumulating the totals. Each envelope is inserted into the carriage like a sheet of paper and turned up a certain distance, which the eye can regulate accurately and quickly, and the number and amount are taken direct from the pay-roll sheet and printed on the envelope, the envelope turned out and the next one inserted. This operation is repeated for all the envelopes. When the last

number and amount have been printed, the total for the numbers and the total for the amounts, which show on the adding wheels of the machine, should agree with the corresponding totals on the pay-roll sheet. This proves that the workmen's numbers and the earnings have been correctly printed on the envelopes.

This work is done very quickly on the Burroughs. In addition to this advantage both the numbers and amounts are proved by comparing the totals with those on the pay-roll sheet, which is a more accurate method than calling back. By employing the machine for this purpose the liability of making errors either by entering wrong amounts or by getting numbers opposite wrong amounts is reduced to a minimum.

If the total amount of money agrees with the envelope and pay-roll totals when the paymaster begins to fill the envelopes and the amount left over just before the last envelope is filled is exactly the required amount for that envelope, it will be a remarkable coincidence if all the envelopes do not contain the correct amounts.

These are the principles entering into the preparation of a pay roll by the Burroughs method, which reduce time and labor and assure accuracy. There is no other machine that will list and add amounts and numbers simultaneously with as large a totaling capacity as the Burroughs.

Suppose one of our representatives were to demonstrate this system in connection with your pay roll—it will cost you nothing for the demonstration.

Some
Practi-
cal Sug-
gestions

Proving
the
Work

Bur-
roughs
Does
Work no
Other
Can Do

A B E T T E R D A Y ' S W O R K

CLERKS NO.	COST PRICE	SELLING PRICE
1	1 0 0	1 2 5
1	2 3 3	3 3 5
3	2 2	4 5
5	7 6 5	1 1 4 5 *
4	1 3 3	2 3 5
6	2 4	5 0
6	4 0	7 5
2	1 2 0	2 3 5
2	1 2 5	2 5 0 *
3	3 0 0	5 0 0 *
6	1 4 5	3 5 0
5	7 6 0	1 1 2 5
1	1 2 0	2 3 4
2	7 5	1 4 5 *
2	2 1 0	3 5 4 *
3	1 6 5	3 7 5
5	1 3 0	2 2 5
6	7 0	1 3 5
4	2 2 5	3 3 5 *
1	5 0	1 2 4
5	8 7 5	1 1 3 5
5	1 8 5	3 4 5
4	3 5 0	4 4 5 *
6	3 9 0	5 5 4 *
3	1 6 5	2 3 5
3	3 7 5	5 5 5
5	3 5	6 5
6	2 5	4 5
2	1 2 5	2 2 5
4	2 5	3 3
5	3 7	7 4
1	5 0	1 1 2
6	1 4 0	2 2 5 *
2	3 8 5	5 0 0 *
4	1 4 5	2 3 5
5	1 2 0	1 4 3
3	1 4 0	2 3 4
6	1 6 5	3 3 4 *
1	1 2 5	2 2 5
3	9 0	1 3 5 *
2	8 7	1 2 2 *
2	1 2 0	2 3 5
2	2 5 0	3 4 4
1	1 4 5	2 3 5
6	1 8 0	2 3 5 *
5	4 0 0	5 0 0 *
4	4 2 0	5 0 0 *
2	1 7	3 5 *
1	1 6 5	2 3 5
4	2 2 5	3 4 4
3	9 0 0	1 1 2 5
3	1 6 0	3 4 5 *
5	5 3 0	7 0 0 *
5	2 2 0	3 3 5
1	5 2 2	6 5 0
3	2 4	6 5
2	2 5 5	3 4 5
6	1 4 5	2 2 4
CASH	7 5 1 0	1 1 4 6 6 *
CREDIT	50.14	73.59 *
TOTAL	125.24	188.25

FIGURE 42

Showing how the Burroughs can list Clerks' Nos. and add and list Cost and Selling Prices at one operation.

CHAPTER XXIII.

Cost and Selling Price Daily Sales Sheet
for a Retailer

THE retailer should know what he makes each day, where he makes it, and who makes it for him.

He very properly objects to the expense of most systems, and frequently loses the benefits that a thorough knowledge of the work his sales department would insure to him.

Retailer
Must
Know
What he
Makes

The following is offered to the small, as well as large retailer, as a simple system for getting important information about the daily sales.

The forms shown illustrate a system that has been found of advantage to the retail store proprietor. The strip of paper ribbon shown in Figure 42 represents a portion of a day's sales, and the items on the sheet, Figure 43—comprise a recapitulation of these sales.

The left hand section of the machine used is made up of one column of red keys and is used for clerks' numbers. The other two sections are of six columns capacity each, and are used for the purpose of adding and listing the cost price in the center section, and the selling price of goods in the right hand section.

Every time a clerk makes a sale, he goes over to the Burroughs, puts his number in the left hand section, the cost of the goods he sells in the middle section, and the selling price in the right hand section, and pulls the handle. This operation not only records the items and identifies them by printing the clerk's number, but also accumulates the cost and selling price in the adding mechanism of the machine.

How the
System
Works
Out

A B E T T E R D A Y ' S W O R K

SALES RECAPITULATION							DATE	
CLERK NO.	COST PRICE	SELLING PRICE	CLERK NO.	COST PRICE	SELLING PRICE			
1	100 233 120 50 50 112 149 225 169 522 1510	125 335 234 124 124 225 235 235 650 2275	5	765 760 130 875 185 395 395 120 400 530 220	1145 1125 225 1135 345 65 74 143 500 700 335			
2	120 125 250 159 210 125 385 87 120 250 250 17 255 870 899 1769	235 250 159 225 225 500 500 1222 235 344 359 345 1384 1406 2790	6	24 40 145 70 390 25 140 165 180 145	50 75 350 135 554 45 225 334 235 224			
3	22 300 165 165 375 375 140 900 900 160 24 1791 550 2341	45 500 375 235 555 234 1354 1125 345 65 2634 980 3614		1324	875 1348 2227			
4	133 208 350 205 145 420 225 528 995 1523	235 335 445 325 235 500 344 847 1280 2127						
RECAPITULATION								
	CLERK NO.	COST PRICE	SELLING PRICE					
	1	1510	2275					
	2	1769	2790					
	3	2341	3614					
	4	1523	2127					
	5	4057	5792					
	6	1324	2227					
		12524	18825					

FIGURE 43

This is a simple form of Cost-Selling-Price Daily Sales Sheet for a Retailer.

Whenever a credit sale is made, a button on the machine, which reads "credit" is depressed before the amount is set into the machine. Then the amount, including the clerk's number, is set in as outlined above, and the handle pulled. By this operation the item is recorded on the sheet but not added. The symbol, #, indicates these items.

Some
Practical
Sug-
gestions

The machine is used in this way by all clerks throughout the day. In the evening a slip containing all the items is taken from the machine. The total shows the total cash sales for the day and also the total cost of the goods sold for cash. A recapitulation of the credit amounts is then taken, by summing the items opposite the symbol, #, this gives the total credit sales, cost, and price.

The items can then be recapitulated by clerks, giving first the cash sales, and then the credit sales. The sales for each clerk can be easily grouped together by the clerks' numbers, showing total sales, both cash and credit.

The clerks' numbers on the recapitulation sheet are printed with the eliminating symbol, #, which prevents their addition. After the cash and credit sales of each clerk are obtained, a summary is made, the total sales of which should agree with the original slip. This operation furnishes proof of the sales sheet items.

Each
Sale
Identified
by
Clerk's
Number

Of course this same machine can be used to take off trial balances, prove postings, invoices, etc., as well as for the purpose noted.

Same
Machine
Useful
for
Many
Things

This system is used by a number of retailers at a great saving in handling their sales, postings, etc.

Other uses for Retailers will be sent by mail, or demonstrated in your store, on request, without cost or obligation to you.

A B E T T E R D A Y ' S W O R K

DECIMAL	16ths	32nds	64ths	DECIMAL	16ths	32nds	64ths
.015625	.....	....	1	.515625	.....	....	33
.03125	.....	1	....	.53125	.....	17	....
.046875	.....	....	3	.546875	.....	....	35
.0625	1	....	....	.5625	9	....	....
.078125	.....	....	5	.578125	.....	....	37
.09375	.....	3	....	.59375	.....	19	....
.109375	.....	....	7	.609375	.....	....	39
.125	2	....	....	.625	10	....	....
.140625	.....	....	9	.640625	.....	....	41
.15625	.....	5	....	.65625	.....	21	....
.171875	.....	....	11	.671875	.....	....	43
.1875	3	....	....	.6875	11	....	....
.203125	.....	....	13	.703125	.....	....	45
.21875	.....	7	....	.71875	.....	23	....
.234375	.....	....	15	.734375	.....	....	47
.25	4	....	....	.75	12	....	....
.265625	.....	....	17	.765625	.....	....	49
.28125	.....	9	....	.78125	.....	25	....
.296875	.....	....	19	.796875	.....	....	51
.3125	5	....	....	.8125	13	....	....
.328125	.....	....	21	.828125	.....	....	53
.34375	.....	11	....	.84375	.....	27	....
.359375	.....	....	23	.859375	.....	....	55
.375	6	....	....	.875	14	....	....
.390625	.....	....	25	.890625	.....	....	57
.40625	.....	13	....	.90625	.....	29	....
.421875	.....	....	27	.921875	.....	....	59
.4375	7	....	....	.9375	15	....	....
.453125	.....	....	29	.953125	.....	....	61
.46875	.....	15	....	.96875	.....	31	....
.484375	.....	....	31	.984375	.....	....	63
.5	8	....	....	.....	....	....	....

FIGURE 44

Table of Decimal Equivalents of Fractions from $\frac{1}{16}$ to $\frac{63}{64}$

CHAPTER XXIV.

A Mechanical Check on Invoices

"It is a trite saying that sin will find you out, but there are certain sins which you must spend time in searching after—among them being the error in bookkeeping."

BEFORE a business man will send his check in payment of a bill of goods, he proves up the invoice. This proof requires a considerable amount of figuring and involves the multiplication of fractions as well as whole numbers. Work of this kind takes time and often comes when other business is pressing and the time required to check up invoices can ill be spared. Even when there is no press of other business the process is more or less tedious when done mentally.

The mechanical method, made possible by the Burroughs, cuts in half the time required for the calculations.

If large amounts are involved it may be necessary sometimes to carry out the decimals for thirds to another place, but for the majority of cases the three place decimals will suffice. As a rule the fractions run from $\frac{1}{6}$ to $\frac{1}{3}$, but the table shown in Figure 44, gives decimal equivalents from $\frac{1}{16}$ to $\frac{63}{64}$.

It has been proven by fair tests that the Burroughs is capable of making straight multiplications more than three times as fast as it is possible to multiply mentally. Consequently, it stands to reason that the multiplications necessary to check an invoice can be made on one of these machines in considerably less time than will be required to do the work mentally.

The first item is proved by setting the repeat button for multiplication, placing 144 (equivalent to 1 gross) in the machine as a multiplicand and using 933 as a multiplier. After converting the vulgar fractions into decimals according to the table, the multiplication is

Process
Tedious
Without
a Bur-
roughs

Bur-
roughs is
Three
Times as
Fast

A
Typical
Example

Some practical suggestions performed in the usual way and the product pointed off the required number of places. In this manner the result, \$13.44, is obtained.

We will take the following items for illustration:

1 gross mops	.09 $\frac{1}{3}$ c	=	\$13.44
2 gross brooms	.12 $\frac{1}{2}$ c	=	36.00
75 lbs. candy	.14 $\frac{3}{4}$ c	=	11.06
225 lbs. lard	.08 $\frac{2}{3}$ c	=	19.50
56 yds. linoleum	.27 $\frac{1}{2}$ c	=	15.40
125 yds. oilcloth	.16 $\frac{2}{3}$ c	=	20.83

In order to give an idea of the advantage to be derived by using a machine for work of this nature, the items given in the illustration have been checked by a good mental calculator and a good Burroughs operator. When the results were obtained mentally the time required was 2 minutes, 30 seconds. With the machine it took only 1 minute, 30 seconds. This comparison of methods by actual time shows the superiority of the Burroughs method unquestionably.

Multiplication
Simple
on the
Burroughs

Where there are a number of items to be checked similar to those we have given, the Burroughs does the work in the least possible time. A little practice will soon enable the operator to become quite expert in multiplication, and he will find that the work can be done in about one-half the time ordinarily required to multiply with a pencil, and at the same time he will save himself the mental fatigue which attends the slower process.

Demonstration of this system, applied to your special requirements, will be given free on request.

CHAPTER XXV.

Checking Tabulations by Multiplication

Did it ever occur to you that "Time is money?" Aren't you wasting money when you could do twice as much effective work with a machine as without it?

THE form reproduced in Figure 45 illustrates well how the Burroughs can check up a tabulation by multiplication.

It represents a Gas Company's list of the cubic feet of gas and the amounts, which are taken from the consumer's ledger.

The tabulation is made by a Burroughs Split & Normal Machine. The number of cubic feet of gas is entered in the left hand section of the machine, and the amount is entered in the right hand section. An item in each section is added and listed by one pull of the handle.

A sub-total is taken at the bottom of each column by depressing the sub-total button and pulling the handle. The sub-total is repeated at the top of the following column to make sure that no amount was placed in the machine by accident when the sheet was turned back and shifted to the next column. When all items have been listed the grand total is printed under the last column in the usual manner.

The price of gas in this case is 8c. per 100 cubic feet, for all accounts. Therefore, the amounts should be equal to their respective number of feet of gas multiplied by eight.

It would be a tedious job to multiply each item in the "number of feet column" by eight in order to prove the amounts. This is unnecessary when the operator has used the Burroughs. He knows that the two footings are correct and since both the number of feet and the

Multiplication
Ex-
pedites
Work

A B E T T E R D A Y ' S W O R K

Customer		District from No. 22 - Louisville		St. to No. 10th - Louisville		St.	
		Summary of Gas Sales for month ending January		1908 Ledger No. 70		Page 2 of 20	
No. feet	Amount	No. feet	Amount	No. feet	Amount	No. feet	Amount
120	650	2504	332328*	4502	36016*	5773	6176*
125	454	47	376	30	840	39	239
135	334	39	315	8	84	15	150
148	452	43	335	24	118	34	232
155	610	79	639	14	113	20	140
167	856	66	829	17	136	31	408
168	704	89	838	32	176	35	280
175	856	48	384	18	96	15	104
187	636	35	854	64	818	97	776
195	814	19	104	11	88	3	14
201	614	20	150	38	304	38	304
205	840	8	64	87	816	113	904
210	160	27	816	8	64	38	96
215	176	18	144	18	130	38	104
225	126	195	780	18	96	38	104
235	440	17	82	50	80	24	96
238	194	13	104	10	80	21	168
244	892	13	160	11	88	6	64
255	440	17	136	13	104	25	200
258	176	81	168	13	104	13	104
265	116	18	85	18	130	27	216
275	64	56	448	78	634	31	316
285	64	35	248	24	193	47	176
290	80	23	184	18	120	36	288
295	764	22	184	24	193	85	680
305	1552	20	160	6	48	87	816
310	1240	41	128	43	148	15	144
320	224	27	125	10	80	33	336
325	224	40	320	8	64	76	608
330	224	21	168	37	296	5	40
340	64	22	176	20	160	44	152
345	1128	38	304	34	272	32	256
355	1252	22	176	13	104	35	280
365	229	19	825	78	644	70	500
375	176	14	112	16	128	35	288
385	176	43	344	26	208	45	360
395	264	34	272	44	352	60	480
405	592	28	234	30	840	22	176
415	1128	17	136	36	48	27	56
425	1252	45	360	34	272	32	256
435	616	20	160	9	72	19	144
455	200	3	24	25	200	21	168
495	784	9	72	17	136	35	440
515	816	15	120	17	136	16	138
525	440	31	248	29	232	200	160
545	1260	27	212	28	232	65	500
555	144	1	96	28	200	61	248
565	1112	58	464	28	200	17	136
575	248	29	132	13	104	34	272
585	568	14	112	28	224	29	232
595	2400	22	176	11	88	18	144
605	2882	13	96	39	312	65	504
615	2552	20	160	16	128	13	104
625	120	40	320	11	88	37	296
635	424	20	160	19	133	26	224
8204	232328*	4502	36016*	3772	46176*	7598	60784*

FIGURE 45

Debit sheet of a Gas Company, showing the number of feet consumed and price added and listed at the same time.

amounts have been listed simultaneously he knows that Some
the number of feet will be opposite their respective Practical
amounts. Hence, all that is necessary to prove the work is Sug-
to multiply the grand total of the "number of feet" by gestions
eight. If the product thus obtained agrees with the
grand total in the "amount" column the work needs no
further proof.

This method illustrates another application of the Burroughs other than simple adding and listing work.

Similar methods can be applied with excellent results Public Works
to many public service corporations such as Electric
Lighting and Power Companies, Water Works, etc.

Hundreds of them already know the advantages of the Burroughs Mechanical Accounting Systems. There are other hundreds who could save money and time and work by a little investigation.

Forms showing application of this system to other lines will be sent free on application.

A B E T T E R D A Y ' S W O R K

Account Number or Name		Date		Time		Time		Total	
Sight No.		Accounts Receivable on Books of		Agency		Time		Total	
File	Name	London	In Days or weeks	1 to 3 months	3 to 6 months	6 to 12 months	Over 1 year	Ex- port	Ex- port
	C. Brownell	25 40		34 7	4 5 7 0			78 57	
	Smith & Son	46 60						46 60	
	Jones & Turner	3 60	6 6 0	3 0 2 3				46 60	
	J. Brown	45 60						45 60	
	C. Howell	304 46				4 0 6 7		345 73	
	C. Hocking	48 60						48 60	
	Jones & Starkey	40 64					15 60	56 14	
	H. Gifford	76 68						56 68	
	Steam Bakery	400 50	4 6 6 0		4 5 5			481 45	
	Armour Pkg. Co.	86 60						86 60	
	H. Jensen	60 80						60 80	
	Powell & Hart	800 80						800 80	
	Homer & Stocking	8 06	7 0 7	7 0 8 8	7 0 8 0		40	158 20	
	H. Bradley	304 40						304 40	
	Giles Bufford	580 00		3 0 7 0				610 70	
	Parsons & Bush	203 33				3 5 0 0		238 35	
	J. Steinbaum	103 80						103 80	
	J. Herbert	46 60						46 60	
	Henry Allen	18 80			4 4 0		40	18 80	
	B. Hadley	30 40						30 40	
	Perking Bros.	45 50						45 50	
	H. Smithson	56 00			4 5 0		5 5 0 0	119 20	
	W. W. Cooley	28 30						28 30	
	G. Jennings	440 50						440 50	
	Hansen & Kart	56 60		6 0 0				56 60	
	C. Dooge	480 80		5 6 0		4 0 4 0		596 80	
	H. Forme	54 40						54 40	
	Crowell & Powers	30 30				3 4 4		33 74	
	Herbert Little	33 50						33 50	
	G. White	22 20						22 20	
	Homer Green			4 4 5 8				44 58	
	William Black						2 4 2 0	94 50	
	Theodore Russell	344 40			4 5 0			348 90	
	John Adams	23 40						23 40	
	Henry Clay	3 40						3 40	
	George Washington Smith	54 40						54 40	
	Daniel Jackson	6 60						6 60	
	Henry Webster	300 40				4 5 0		306 00	
	Brown Bros.	40 05						40 05	
	Hot & Smart	78 68						78 68	
	G. Keeling	77						77	
	A. Stevens	447 70						447 70	
	D. Stanley	50 60						50 60	
	P. Jones	26 60						26 60	
	H. Smith	27 76						27 76	
	V. Owens	10 05						10 05	
	A. Jules	27 00						27 00	
	Deering Flow Co.	587 70						587 70	
	W. Withey	37 77						37 77	
		6128 46	1 1 9 9 5	2 1 1 9 1	1 9 8 6	1 3 2 8 0	7	6791 56	

FIGURE 46
The names are entered on the sheet first and the amounts filled in afterwards with the adding machine.

CHAPTER XXVI.

Easy Way of Tabulating Accounts Receivable
for Credit Department

"The trouble with most of us is that we don't grasp the opportunities that come our way. You have a good opportunity right now to secure some new and valuable ideas from one of our salesmen. Our men put in all the time they have learning new things, meeting business men like yourself, studying accounting conditions like yours and arranging systems for them. A Burroughs man is just that much more than a salesman—he is a helper."

THE use of the Burroughs greatly simplifies the making of a monthly or weekly analysis of outstanding accounts for the credit department. The cross-tabulating carriage enables the operator to list items overdue thirty, sixty, and ninety days and total the amount on each account, thus necessitating only one turning of ledger leaves to record accounts in need of attention.

Since the standard typewriter spacing is the same as that used on the Burroughs Machine it is an easy matter to write in the names first, then to adjust the sheet in the machine carriage so that the first row of items will fall opposite the first name. This done, all items following will fall opposite their corresponding names, as shown in Figure 46.

You may think that the old hand method of doing this kind of work is the best one, but you can't be sure of it unless you have made a comparison between it and the Burroughs method.

Since it doesn't cost you anything to make this comparison and also, since our method *might* be of service to you, why not try it?

One of our salesmen will be glad to show you how this is done—in your own office—without cost or obligation to you.

Cross
Tab-
u-
lating
Carriage

Stand-
ard
Type-
writer
Spacing

SALESMAN NO.		WEEKLY SUMMARY OF SALES BY SALESMEN					TOTALS	
	MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY	SATURDAY		
1	12655	12750	13245	12567	13400	14250	78887*	
2	9655	10155	8755	10245	8855	10255	57920*	
3	4565	6500	9500	8755	10045	12256	51621*	
4	10234	12244	9845	8733	8966	10455	60477*	
5	7565	7754	10050	7500	8745	11075	52689*	
6	22500	21545	23367	17645	13565	15575	114157*	
7	9565	10433	8756	6650	10255	10455	56114*	
8	12565	11275	9955	10000	8856	10277	62928*	
9	7643	10277	9845	8678	9125	9834	55403*	
	96947*	102933*	1C3318*	90793*	91812*	104432*	590235*	

FIGURE 47

The total in the lower right hand corner checks both the "weekly totals" and the "daily totals."

CHAPTER XXVII.

A Shorter Way of Checking Statistics

WHEN a sheet contains several columns of items which must be cross-footed as well as column-footed, the Burroughs Adding Machine is the best safeguard to prevent errors.

The amounts can be entered more rapidly and more neatly by the aid of the machine, and at the same time the operator is assured that the items which are printed on the sheet are added correctly. All that is necessary for correct results is to depress the proper keys. The machine does the rest.

The amounts can be tabulated either in column form or in rows across the sheet. One set of footings is made, whichever the method chosen.

The table of amounts shown in Figure 47 has been made by tabulating in columns. A clearing signal, *, is printed at the top of each column, then the items are added and listed and a total taken in the usual manner.

Then the rows are cross-footed by the machine, the machine carriage being thrown back so that the amounts will not be entered on the sheet, and the total is printed in its proper column by restoring the carriage to normal position, depressing the total button and pulling the handle. The next row is then footed in a similar manner.

The cross-footings are then totaled on the machine and the grand total printed at the bottom of the column of cross-footings. The totals of the other columns are then added, and if the grand total of these totals agrees with the grand total of the cross-footings, the operator knows that his work is correct.

This suggestion is given not only for the purpose of showing how certain kinds of work can be proved, but to accentuate the fact that the Burroughs is far more than a mere adding and listing machine. Forms showing application of this method to different systems of accounting and lines of business, sent free on request.

Bur-
roughs
is Best
Safe-
guard

A B E T T E R D A Y ' S W O R K

Middleville, N. Y., February 5, 1910

Shipped by THOMAS HIDE & LEATHER CO.,

To F. B. BANCROFT & CO., Agents,
No. 55 South St., Boston, Mass.

VIA. N. Y. C. & H. R. R.

2 Cases. 149 Bales.

Value

	C. M. V.	C. W. R.	C. M. V.	C. M. R.	C. R. V.	C. M. M.
1	108	1	111	1	98	1
1	101	1	108	1	101	1
1	992	1	101	1	953	1
1	105	1	983	1	992	1
1	98	1	105	1	102	1
1	110 ³	1	107	1	104	1
1	109	1	109 ¹	1	96	1
1	106 ²	1	106	1	108	1
1	100 ²	1	104	1	105	1
1	107	1	100	1	101 ¹	1
1	109 ³	1	107 ²	1	102	1
1	108	1	99	1	96	1
1	105	1	106	1	982	1
1	993	1	107 ³	1	97	1
1	106	1	108	1	96	1
1	109	1	110	1	95	1
1	110	1	103	1	101 ³	1
1	105	1	99	1	110	1
1	104	1	98	1	102	1
1	101 ²	1	102	1	107	1
1	110	1	111 ³	1	108	1
1	99	1	102	1	102	1
1	98	1	110 ²	1	110	1
1	102 ²	1	103	1	106	1
1	104	23	2414 ²	1	104	1
1	106			1	104	1
26	27223 ²			1	110	1
			1	102	1	102
			1	983		
			1	972		
			1	99		
			1	961		
			1	95		
			1	973		
			1	99		
			1	100		
			1	110		
			1	102		
			1	103		
			1	104 ¹		
			1	101		
			1	110		
			1	100		
			43	4,3721		

FIGURE 48

Leather Invoice Sheet prepared on the Burroughs Automatic Counter Machine.
Note the items counted and the totals printed.

CHAPTER XXVIII.

A Quick Method of Handling Leather Invoices

THE old method of making out an invoice of hides similar to the reproduced facsimile, was to list the number of square feet in each bundle by hand, then go back and foot the column mentally, which in this case is complicated on account of the fact that fractions are used. Then the items in each column were counted and the total set down opposite the footing.

In other words there were three separate processes which had to be performed by the hand and mind.

The Burroughs lists and adds at one operation the number of feet in each hide, including the fractions and also the "1" opposite each amount, which is equivalent to a counter.

It is not even necessary to press down a "1" key to add and list the "1" because the machine does this automatically every time an amount is added and listed.

When all the amounts have been listed on the sheet, together with the column of "1's," the totals of both columns are obtained by simply pressing the total button and pulling the handle. The total of the "1" column shows the number of hides and the total in the amount column shows the total measurement of the hides, as shown in the invoice reproduced in Figure 48.

In order to give an idea of the difference in the time required for a good mental calculator to add and list the amounts, make the footings, and then count the items, and a good Burroughs operator to do the same work with a machine, that counts the items automatically, a test was made. It took the man who used pencil and paper 7 minutes, while a Burroughs operator required only 2 minutes and 50 seconds to complete the work. The work of the former was hand written while the work of the latter was printed exactly as reproduced.

A B E T T E R D A Y ' S W O R K

RENNERT-MILLETTE CO.

SAN ANTONIO, TEX. February 5th, 1910

STATEMENT OF WEIGHTS OF COTTON SHIPPED BY THE SPLIT & NORMAL MACHINE FOR ACCOUNT AND NAME OF MESSRS. S. B. JONES & CO.

No.	To	From	M. K. & T.	New York City,	S. S. Waldo,	Houston	Name	J. A. L.
100								
101	513	121	534	141	511	161	545	181
102	504	122	543	142	522	162	504	182
103	545	123	530	143	503	163	503	183
104	4.7	124	530	144	544	164	523	184
105	5.8	125	512	145	534	165	502	185
106	4.98		512	146	523	166	503	186
107	504	127	533	147	510	167	512	187
108	525	128	510	148	502	168	520	188
109	502	129	523	149	4.78	169	533	189
110	510	130	512	150	4.90	170	504	190
111	544	131	4.78	151	4.97	171	506	191
112	503	132	4.69	152	4.60	172	523	192
113	556	133	4.90	153	4.78	173	504	193
114	4.98	134	4.89	154	3.87	174	533	194
115	4.79	135	4.58	155	4.89	175	512	195
116	4.56	136	504	156	5.03	176	510	196
117	4.40	137	534	157	5.02	177	501	197
118	4.56	138	500	158	512	178	532	198
119	503	139	523	159	511	179	4.63	199
120	522	140	502	160	543	180	4.98	200
10073*		10179*			9.999*		10530*	10142*
								*
								10073
								10179
								10999
								10530
								10142
								50923*

FIGURE 49

The Bale numbers and the Bale weights are set down at the same time with the Split & Normal Machine. The weights only are added.

CHAPTER XXIX.

A Quicker and Easier Way for Making
Cotton Invoices

ACOTTON invoice can be made out on a Burroughs in less than half the time it takes to make one by hand.

When the work is done manually the bale number and weight must first be listed and the weights added afterward, or in case a shipping statement is made out which contains the weights and number of bales, the weights must be added and listed by hand and the items must be counted.

The Split & Normal machine enables the operator to list the bale number and to add and list the weight at one operation. Thus in Figure 49 the first items "101" and "513" were set into their respective sections of the machine keyboard and the former was listed and the latter listed and added by pulling the handle of the machine only once.

The automatic item counter machine can be used in making out shipping statements. This machine prints a "1" automatically every time an item is added, and also prints the total of the "1" column automatically when the total of the amount column is printed.

The facsimile form—Figure 49—reproduced gives a clearer idea of the method of making out cotton invoices on the Burroughs. The automatic item counter works, as in the leather invoice, shown in Figure 48. Facsimile forms, as used by concerns handling their invoices in this way, free on request.

DAILY RECAPITULATION OF SALES

CLERK	STOCK NO.	LOT NO.	COST PRICE	SALE PRICE
DEPT. 1	1 1545	344	1 250	1 550
	1 2345	154	325	500
	2 4345	145	130	250
	4 2454	254	500	650
	3 5567	546	1000	1 250
	3 1355	.75	1750	2000
	5 3645	.46	2100	2500
	5 10467	435	355	500
	4 14123	.51	645	750
	3 11456	125	500	650
	5 11457	7	855	1000
	1 11743	.59	1445	1750
	2 2234	7	1500	1750
	4 1111	122	2250	3000
	1 1267	.35	2755	3500
	3 3235	.50	3200	4000
	5 10344	306	1575	2250
	4 3045	402	2000	2500
	2 2040	125	450	750
	1 8304	8	125	250
	5 7007	.9	150	375
	4 6055	1.11	1250	1750
	2 11400	2.01	1550	2250
	2 11500	2.02	3145	4250
			308.05	399.75*
DEPT. 2	6 2235	125	1 250	1 750
	9 2435	145	2250	3100
	8 2445	254	750	1000
	7 2556	247	335	500
	6 2606	.66	125	250
	9 3206	.70	254	375
	9 3357	.9	445	575
	8 3359	.10	600	750
	9 1456	.11	750	1000
	10 1457	.6	.96	1.75
	10 1567	.40	1250	1500
	10 1670	456	2250	3500
	6 4222	546	650	850
	8 5335	666	1350	1750
	7 5450	775	650	975
	6 5020	535	236	365
	10 5057	347	144	225
	10 6056	876	250	355
	9 10234	446	450	750
	8 10235	123	500	655
	6 10343	127	1250	1650
	7 745	128	2250	2725
	10 567	129	125	225
	7 568	143	200	300
	6 600	155	200	325
	9 1000	.77	100	125
	8 1001	.78	250	335
	10 1005	.79	1250	1550
			202.10	276.35*

FIGURE 50

Daily Recapitulation of Sales by Departments, Clerks, Stock and Lot Numbers
Cost and Selling Price, as made on a Style No. 15 Split & Normal Burroughs.

CHAPTER XXX.

System for a Retail Clothing Concern

THE illustration in Figure 50 is a daily recapitulation of sales made on a No. 15 Split & Normal Burroughs with an automatic cross-tabulating carriage.

The idea was obtained from a retail cloak and suit dealer in the city of Detroit and shows how the sales are classified by departments and clerks.

The system is very simple and has the advantage of indicating the daily profit on goods sold.

A perforated tag, similar to those in Figures 51 or 52, is attached to each garment. On the upper and lower half of this tag is written the Stock No., Lot No., Size, Description, and Selling Price.

When a sale is made the clerk tears off the lower half of the tag and writes his or her number on it. This number is enclosed with a circle in the illustrations.

The upper part of the tag is delivered with the garment and the lower part is sent to the cashier.

The large tags are attached to the larger garments such as skirts, coats, etc., and the small tags are attached to waists, petticoats, etc.

They are made of different colored cards, each color designating a certain department. In this way they are easy to sort into their respective departments when the sales recapitulation is made.

Every morning, the cashier assorts the tags for the previous day's sales, by departments. This is quickly done by grouping them according to colors.

Then he takes them over to the Burroughs Bookkeeping Machine and lays his stock order book near by so that he can consult it for cost prices.

The machine is split so that the keyboard is made up

Daily Profits
Tabulated

Different Colors of Tags

Some of two independent sections. Then the clerk's number, Practical Sug. gestions (enclosed in the circle), is listed. The pull of the handle that lists this number shifts the carriage automatically so that the stock number and lot number can be listed.

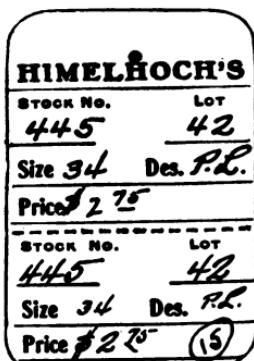


FIGURE 51

The stock number is set up in the left hand section of the keyboard, and the lot number in the right hand section. A pull of the handle lists both simultaneously and shifts the carriage over so that the cost and selling price can be added and listed.

The cost price is now looked up in the stock order book, using the stock number, already listed, as a reference. This amount is

then set into the left hand section and the selling price, (indicated on the tag), is set into the right hand section. A pull of the handle adds and lists both amounts simultaneously, turns the sheet up a space and returns the carriage to its original position, automatically.

Five Items Tabulated at Once

By this method, all the information for each sale, consisting of five items, is tabulated at one operation, adding only the cost and selling prices.

A complete record of sales by clerks and by departments is kept in this way. By having a daily record of this kind a detailed reference to a sale can be produced upon a moment's notice in case of returned goods or a dispute with a customer in making exchanges, settling bills, etc.

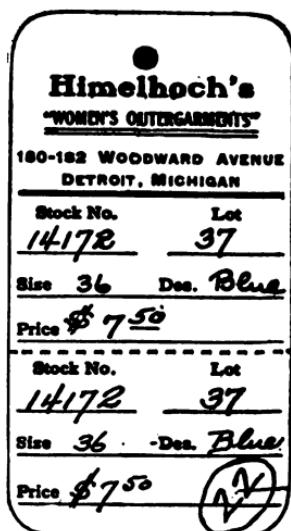


FIGURE 52

CHAPTER XXXI.

Daily Balance System for a Retailer

THE following system is a practical illustration of the way in which a Burroughs Adding Machine can be used by a Retail Grocery for getting a daily and weekly balance. It is operated in connection with a ticket charge system and not only shows the standing of all accounts, but automatically checks the balances brought forward on the tickets.

The system is as follows:—The sales tickets are made in duplicate.

All cash sales tickets go to the cashier, who files them on spindles by the different clerks. At the end of the day, or the first thing the following morning, he adds and lists these tickets by clerks, thus obtaining the total cash sales for each clerk—see Figure 53. This total also serves in balancing the cash, as will be explained later.

The charge slips are filed in racks alphabetically. The original slip for charge sales is white and the duplicate is pink.

When a charge sale is made the original is filed in the rack and the duplicate is given to the customer.

In case a payment on account is made with the purchase of goods, the pink (duplicate) sales ticket is filed and the original is given to the customer.

The rack now contains charge sales and payments.

Bal-
ances
Checked
Auto-
matic-
ally

Cash Sales by Clerks	
Clerk No.	1 #
*	
1.24	
.45	
.75	
.60	
1.33	
.50	
.75	
.35	
.45	
.50	
2.50	
3.25	
.65	
.75	
2.20	
1.55	
.76	
.75	
2.50	
3.35	
1.75	
26.93 *	

If a
Pay-
ment is
Made

FIGURE 53

A B E T T E R D A Y ' S W O R K

<u>NAMES</u>	March 6	March 15	March 20	March 27
Abbot, H.S.	255	745	1156	1442
Ames, L.L.	142 ¹⁰ / ₁₂ 4 ¹²	225 ¹⁰ / ₁₂ 1 ¹²	175 ³ / ₁₂	325 ³ / ₁₂
Atkins, T.L.	7.75 ¹²	315	450 ⁵ / ₁₂	760
Atcheson, M.S.	450 ¹²	350 ⁴ / ₁₂	825	825 ¹ / ₁₂
Bannigan, M.E.	548 ¹²	375 ¹²	355	450
Bennett, M.L.	350	316	427	475
Bennett, P.E.	11.75 ¹²	755	625	950
Bowen, A.	465 ¹²	365	550 ⁴ / ₁₂	595 ⁵ / ₁₂
Boyer, M.A.	615	1285 ¹⁵ / ₁₂	415	950
Brown, T.I.	475 ⁹ / ₁₂ 1 ¹²	550 ¹⁰ / ₁₂ 10 ¹²	1725 ¹⁰ / ₁₂ 5 ¹²	1550 ¹⁵ / ₁₂
Brown, T.S.	125	450	1450 ⁵ / ₁₂ 5 ¹²	1100
Burroughs, W.S.	369 ¹²	625	925	1050
Gross, Martin.	425	595 ¹²	400	637 ⁵ / ₁₂
Daniels, B.	327 ³ / ₁₂	254	700 ² / ₁₂	625
Davidson, L.F.	1116 ¹⁰ / ₁₂	1350	1450 ⁵ / ₁₂	1216 ¹² / ₁₂
Duthcher, Arthur.	314 ⁸ / ₁₂	350	5.75	950
Edwins, John A.	158	475	715 ³ / ₁₂ 2 ¹²	455
Everett, D.D.	324	354 ³ / ₁₂	200	496
Fisher, A.M.	235	650	1575 ⁵ / ₁₂ 5 ¹²	1425
Fowler, E.E.	843 ⁵ / ₁₂	349	2055	2495 ²⁰ / ₁₂
<i>Gibbons</i> ^R			950 ⁵ / ₁₂	750
Grant, M.G.	3515 ³ / ₁₂	1575	2054	2475 ²⁰ / ₁₂
Harrigan, T.M.	150	320	454	725
Hennessey, S.B.	215 ⁸ / ₁₂	243	475	1175
Innis, L.L.	546 ⁵ / ₁₂	454	1050 ¹⁰ / ₁₂	957
Ingols, J.J.	438 ⁴ / ₁₂	320	450	957
Jones, A.I.	815	254	245	545
Jones, T.D.	537 ⁶ / ₁₂	353	1475 ¹⁰ / ₁₂	1765 ¹⁰ / ₁₂
Knox, H.I.	254	460	695	1050 ¹⁰ / ₁₂
Komopach, H.P.	529 ⁵ / ₁₂	343	454	745 ⁵ / ₁₂
Lane, D.O.	257	676 ⁵ / ₁₂	550	916
Lyon, B.I.	553	548	750 ⁵ / ₁₂	675
Mann, I.A.	213	250	350	450
McCarthy, E.L.	354 ⁸ / ₁₂	150	1275 ¹⁰ / ₁₂	1027 ¹⁰ / ₁₂
Nelson, F.T.	1215 ¹⁰ / ₁₂	275	1015	1575 ¹⁵ / ₁₂
Niles, G.H.	364	389	430	750
Owens, S.S.	540 ⁵ / ₁₂	400 ⁴ / ₁₂	350	475
Patten, G.L.	840	354	400	750
Paviour, R.S.	350 ⁹ / ₁₂	138	650	800
Quincy, John.	450 ⁴ / ₁₂	48	340 ⁵ / ₁₂ 2 ¹²	340
Quinn, K.	200 ² / ₁₂	100	760 ⁷ / ₁₂	550
<i>Raymond, J.H.</i>				260
Reed, K.J.	54	353 ⁵ / ₁₂	340	450
Rirodan, J.	215	815	650 ³ / ₁₂	640
Shaw, E.D.	587 ⁵ / ₁₂	153	570 ⁵ / ₁₂	360
Thompson, K.J.	335	335	760 ⁵ / ₁₂	675
Uhlet, G.W.	755 ⁵ / ₁₂	500 ⁵ / ₁₂	230	350
Vance, F.G.	245	354	750 ⁷ / ₁₂ 2 ¹²	.75
White, B.S.	354 ³ / ₁₂	.76	450 ⁴ / ₁₂	
Wilson, W.J.	464 ¹ / ₁₂	240	550 ³ / ₁₂	250
	23395*	20387*	35830*	41283*

FIGURE 54

McCaskey System Weekly Trial Balance.

In order to get a daily balance it is necessary to find out how much has been charged and how much has been paid on account, during the day.

Some Practical Suggestions

The charges and credits addition is shown in Figure 55.

This total, together with the total cash sales which is taken from the cash sales tickets as described above, gives the total amount of cash received during the day, and in this way the cash is balanced.

How Cash is Balanced

Now if all the extensions are made correctly on the tickets, the total of yesterday's balances on acting accounts, deducted from the total of today's balances, plus the payments on account, will give the amount of charge sales for the day.

In order to prove absolutely the extensions on all active accounts for the day, the charge sales indicated on the tickets are added and listed, and the total printed.

Then, if the difference between yesterday's balances and today's balances, plus the payments on account, agrees with this total, the bookkeeper has assurance that each and every customer's ticket is absolutely correct.

Once a week, the customer's debit balances are transferred to a sheet as shown in Figure 54, a space being left at every fourth item, to accommodate new names that may be added to the list of accounts. The names are arranged alphabetically.

Names Arranged Alphabetically

Thus, for March 6th, the debit balances of customers are added, and listed opposite their respective names.

Daily Charges and Credits	
1	2 4 5 *
1	6 5 0
1	7 5 0
2	2 3 6
1	1 0 0
	7 5 5 *
	3 4 5
	5 0 0 *
	5 0 0 *
1	0 0 0
2	2 0 0
1	7 5 5
	7 4 5
	6 5 0 *
1	0 0 0 *
1	3 0 0
	5 5 0
1	3 5 0
	7 5 0 *
1	2 5 0 *
1	5 0 0
	5 0 0 *
1	4 5 0
	7 6 0
1	8 9 3 6 *
	5 9 0 5 *
FIGURE 55	

Some Practical Suggestions This sheet is kept before the cashier.
Any credits to account, made during the week, are entered with pen and ink opposite the name of the customer who makes the payment.

The next week, the debits are drawn off in a second column, and credits to account for that week are entered with pen and ink. A total of the pen and ink credits on this sheet for the week, is balanced against the total weekly credits taken from the customers' tickets with each daily balance. In this way the sheet is kept in perfect balance with the customer's accounts.

Credit Sheet is a Detective The pen and ink credit on the sheet acts as a detective, enabling the proprietor to tell at a glance just how each account stands.

For instance, the account of N. S. Abbott, in Figure 54, shows an increase from \$2.55 on March 6th to \$14.42 on March 27th. This account needs attention, and the facts regarding it are easily discovered by consulting the balance sheet.

If Original Records are Lost Another advantage of this sheet is, that it gives the exact standing of all accounts, which would be a very valuable piece of information in case the original records were destroyed.

This system is in actual operation in the store of J. C. Burke & Son, of Springfield, Mass.

CHAPTER XXXII.

Taking Inventories With the Burroughs

THE adding machine is very useful in connection with inventories taken by manufacturers, jobbers, wholesalers or retailers. No matter what the difficulties may be on account of discounts to be figured, inaccessibility of the adding machine, etc., the sheets can always be footed correctly and quickly with the Burroughs.

There are many instances, however, where the machine Does More can do a great deal more than to simply make the footings.

The illustration, in Figure 56, shows a factory inventory sheet of finished parts. The entire sheet, with the exception of a few hand notes, was prepared with the Burroughs, including the multiplications for extensions.

Inventory of this stock was taken on small tickets, a Inventory Tickets symbol being entered on each ticket according to the class of stock, together with the number of parts.

After completing them thus far, they were taken to the finished-stock keeper, who compared them with his perpetual stock record, and checked this record.

He then entered the cost of the parts on their respective Multi-tickets, and made the extensions by multiplying with the Burroughs.

The tickets were then sorted according to certain groups of finished parts, and the items tabulated on sheets with the machine. There was a great amount of time saved in doing this work mechanically, a large part of which was due to the adding and listing of the amounts at one operation.

There is a large stationery house in the city of Detroit, that makes a nice use of its machine for inventorying the stock in the ground-floor sales-room.

FINISHED PARTS				
	SYMBOL	NO. PIECES	PRICE PER 100	AMOUNT
1	6.02#7	5.32	11.000	58.52
	6.02#11	3	50.16	.15
1	6.02#11	3.14	97.08	30.48
1	6.02#11	2.23	91.60	20.43
1	6.02#13	1.20	113.50	13.62
1	6.02#13	1.99	115.50	22.98
	6.02#13	4	91.49	.37
1	6.02#15	7.45	96.13	71.62
1	6.02#15	2.83	98.88	27.78
1	6.10 ^a	4.68	72.51	33.93
	6.10 ^a	58.47	19.96	116.71
	6.10 ^a	24.70	19.96	49.30
1	6.10	.83	49.62	4.14
1	6.10 ^a	51.65	54.40	280.96
1	6.10 ^a Ex.T	1.90	55.50	10.55
1	6.10 ^a Spec.	3.73	84.74	31.61
1	6.10 ^a Spec.	5	84.74	.42
1	6.10 ^a %	.36	334.86	12.05
	6.10 ^a R	39.97	19.22	76.62
	6.10 ^a R	.70	19.22	1.35
	6.10 ^a R%	.72	133.34	9.60
	6.10 ^a R%	.19	133.34	2.53
	6.10 ^a R%	11.36	116.74	132.62
	6.10 ^a R%	.26	116.74	3.04
	6.10 ^a R%	.23	246.02	5.70
1	6.10 ^a T	28.65	581.4	1662.8
1	6.10 ^a R	6.66	54.27	361.4
1	6.10 ^a R Spec.	.37	54.27	20.1
1	6.10 ^a T%	3.14	60.00	188.4
1	6.10 ^a T%	4.67	60.00	280.2
1	6.10 ^a L	29.91	59.14	176.89
1	6.10 ^a L	4.93	84.05	414.4
1	6.10 ^a L Spec.	1.08	60.51	6.54
1	6.10 ^a L Ex.T	.78	114.45	8.93
1	6.10 ^a L S&S	.42	92.73	3.89
				1506.28*

FIGURE 56

Factory Inventory Sheet, showing parts indicated by a symbol.

One clerk goes over the articles on counters, shelves, and in show cases, calling out their values to another clerk at a Burroughs. Each amount is added and listed as it is called, and the totals are taken by certain counters, groups of shelves, and show cases, showing the value of stock contained by each.

The advantage of doing the work this way is, that the total value is obtained as soon as the last item has been called.

The method usually employed in a grocery is for two clerks to go over the stock, one calling off the kind and amount, and the other entering them on sheets.

The sheets are then sent to the buyer, head bookkeeper, or some one in authority, who enters the prices and extensions.

The prices can be tabulated directly to the sheet with the Burroughs.

Then the extensions are made by throwing the machine carriage out of printing position, making the multiplications, and restoring the carriage when the total is printed. By this process the number of articles, and cost per article, can be seen on the sheet in the carriage while the multiplications are being made.

There are hundreds of inventories that can be taken with the Burroughs with a saving of much time and labor.

Some
Practical
Sug-
gestions

Booklet
About
Multi-
plication

A B E T T E R D A Y ' S W O R K

FIGURE 57

A Practical Stock Record Card as used in a Factory Storeroom.

CHAPTER XXXIII.

Stock Record and Perpetual Inventory

THE Burroughs bookkeeping machine is a fine assist- Separate Card for Each Class
ant to the stock-keeper who looks after the raw stock, for checking up balances, and making extensions on the perpetual stock record, and inventory.

The illustration in Figure 57 shows a raw-stock record card, on which has been recorded a number of receipts and issues of stock with prices and balances of stock on hand. With this system there is a separate card for each class of stock. Suitable column ruling is used for dates of orders, amounts received, amounts issued and balances on hand.

The reverse side contains columns for amounts issued and the balances, the items being carried forward to this side when the front has been filled.

The adding machine is used for checking the balances and making the extensions.

For instance, the amounts received shown on the card, in Figure 57, are two orders of 3000 pounds each, or 6000 pounds altogether.

Before carrying the last balance, "1665," over to the other side, it must be checked. This is done by adding the amounts issued, and deducting the total from 6000. The addition is made on the adding machine.

Thus, the total amount issued is 4335 pounds. This total, deducted from 6000, leaves 1665 pounds on hand. Since this agrees with the last balance, "1665," the stock-keeper knows that his extensions have been correctly made, and carries the "1665" over to the other side of his stock card without fear of an error.

In case the stock issued involves fractions of pounds, say one-fourth, one-half, and so forth, the decimals .25,

Some .50, etc., can be used. Thus to add $4\frac{1}{4}$ and $21\frac{1}{2}$ on the Practical regular machine, simply add 4.25 and 21.50. The total gestications will be 25.75, which is equivalent to $25\frac{3}{4}$.

Sug.
There is another adding machine application to these cards. In making the extensions for the cost of material in each issue, it is necessary to multiply the amount issued by the price per pound. This can be done very rapidly on the machine.

Then to prove all the extensions for issues on the face of the card, multiply the total amount issued by the price, and compare the result with the total of the extensions. They should agree, either exactly, or to within two or three cents. If there is a slight discrepancy, it will be due to dropping or adding the fractions of cents, when the amounts are entered on the card.

Slight Discrepancy of no Account In Figure 57, the total cost of material issued, (obtained by multiplying the total "4335" by .0415), is \$179.90. The total of the individual costs of each issue of material is \$179.94. The difference of 4 cents is due to several fractions of cents (running over five mills), being added when the individual costs were recorded. The two totals agree closely enough, however, to give assurance of the accuracy of the extensions.

When it is remembered that several hundred of these cards make up the stock record, the value of a machine for checking them will at once be seen.

Ready Aid to Stock- keeper Much valuable time can be saved, and the stockkeeper who uses a Burroughs, soon regards it as his most valued helper.

CHAPTER XXXIV.

**Adding and Listing Hours and Minutes;
Tons and Cwts.; Feet, Inches and
Fractions of Inches**

"There is but one test of a machine's usefulness, as there is but one of a man's—can it do the work which must be done?"

PAY-ROLL work requires the addition of hours and fractions of hours. When the fractions of hours are expressed in minutes, the hours and minutes can be added and listed on a Burroughs Hour and Minute Machine, in about one-fourth the time taken to do the same work by hand.

Suppose an addition of hours and minutes is to be made as shown in Figure 58.

If the work is done by hand it is necessary, first to add the minutes and convert them into hours and minutes, then to carry the hours thus obtained over into the hours column and add the hours.

When the Burroughs machine is used, the operator simply sets in the item by depressing the proper keys and pulls the handle. Each handle pull adds and lists whatever amount of hours and minutes has been set into the machine and automatically converts the minutes into hours. A correct total can be taken at any time by depressing the total button and pulling the handle.

*
9 22
1 0 45
1 1 2
7 25
8 36
1 0 29
1 2 14
8 33
7 8 26 *

FIGURE 58

Adding and Listing Tons and Cwts.

IN certain lines of business, especially the coal business, there is considerable addition of tons and cwts. When such additions are made mentally, the tons column must be added first, and then the cwts. column, and after these two additions have been completed it is necessary to convert the cwts. into tons and cwts., and to add the extra number of tons to the total of the tons column already obtained.

*	
1 2 15	
1. 1 1 16	
4 4 15	
6 5 18	
2. 3 3 15	
1. 2 2 8	
3 4 15	
5 5 18	
1 2 4	
1 3 7	
7. 0 7 11 *	

FIGURE 59

The Burroughs Ton and Cwt. Machine is capable of adding and listing tons and cwts. in the same manner that ordinary numbers are added and listed. A ton amount and a cwt. amount are set into the machine by depressing the proper keys, then the handle is pulled and both the ton amount and the cwt. amount are added and listed. The two amounts are printed side by side as shown in Figure 59.

Adding and Listing Feet, Inches and Fractions of Inches

The work involved when feet, inches and fractions of inches are added and listed is very considerable, but when the Burroughs Foot and Inch Fractional Machine is used the addition is as simple as if ordinary numbers are being added.

When the mental method is employed the fractions of inches must first be added and converted into inches

and fractions, and the inches carried over into the inches column. This is a process more or less difficult and open to many errors. Then the inches must be added and converted into feet and inches and the feet carried over into the foot column. Then the foot column must be added. In other words there are five additions and two divisions in the process.

The Burroughs, however, makes this complicated addition as simple as if only one column of figures were being added. The amounts of feet, inches and fractions of inches are set into the machine by depressing the proper keys and are added and listed by pulling the handle. The fractions and inches are automatically converted by the machine, thus making it necessary for the operator to do nothing more than punch the right keys and pull the handle. A correct total can be taken at any time by depressing the total button and pulling the handle, regardless of whether it contains few or many items.

The addition shown in Figure 60, will give a clearer idea of the work done by the machine. The inches are designated by small numerals, the feet by the regular size numerals and the fractions by ordinary fractional type.

Samples of the work of these machines free for the asking.

		*
2	3	4
3	2	5 $\frac{1}{4}$
5	4	7
	5	8 $\frac{1}{8}$
1	2	11
2	3	10 $\frac{3}{8}$
2	2	5 $\frac{1}{4}$
1	3	8 $\frac{1}{2}$
1	8	8 11 $\frac{1}{2}$ *

FIGURE 60

CHAPTER XXXV.

**Multiplication, Subtraction and Division
by Machinery**

THE use of the Burroughs for multiplication, subtraction, and division, in some lines of business, is quite as important and constant as for addition. The accuracy, the speed, and the advantage of having a printed record of all operations, are so apparently in its favor for this everyday use that, where a wide diversity of work is to be accomplished, the choice of the Burroughs is foregone.

Multiplication

MULTIPLICATION on the Burroughs is repeated addition. When the Repeat Button is depressed, the amount set into the machine is added and listed as fast as the handle is pulled.

*	2. 2 6
2. 2 6	
2. 2 6	
2. 2 6	
2. 2 6	
1 1. 3 0 *	

FIGURE 61

Suppose it is desired to multiply 226 by 5. Set the 226 in the machine, pull the handle five times, release the keys with the Release Button and take the total. This total is the product. The operation is shown in Figure 61.

Suppose it is desired to multiply 2434 by 432. Where a number is multiplied by 432 it is equivalent to multiplying it by 2 and by 30 and by 400. The process is very simple, as shown in Figure 62.

If it is desired to print only the products, without the intermediate process of obtaining them, it can be done by throwing the carriage out of printing position while the multiplication is being made, and restoring it only for the printing of the product.

In Figure 63, the multiplicand and multiplier have been printed with the eliminating button depressed, the multiplications made with the carriage thrown back and the products printed as shown.

*	
2 4 . 3 4	
2 4 . 3 4	
2 4 3 . 4 0	
2 4 3 . 4 0	
2 4 3 . 4 0	
2 , 4 3 4 . 0 0	
2 , 4 3 4 . 0 0	
2 , 4 3 4 . 0 0	
2 , 4 3 4 . 0 0	
1 0 , 5 1 4 . 8 8 *	

FIGURE 62

*	
2 2 . 4 5 #	
5 . 3 3 #	
1 1 , 9 6 5 . 8 5 *	
7 . 4 4 #	
3 . 6 7 #	
2 , 7 3 0 . 4 8 *	

FIGURE 63

In Figure 64 is shown a series of multiplications made in a similar manner, with the exception that the products are printed opposite the multiplicands and multipliers.

2 2 . 4 5	5 . 3 3	1 1 , 9 6 5 . 8 5 *
7 . 4 4	3 . 6 7	2 , 7 3 0 . 4 8 *
1 3 . 4 5	4 . 4 4	5 , 9 7 1 . 8 0 *
5 . 4 5	1 2 . 3 3	6 , 7 1 9 . 8 5 *
2 5 . 4 5	6 . 5 5	1 6 , 6 6 9 . 7 5 *
3 4 . 5 4	2 . 3 5	8 , 1 1 6 . 9 0 *
7 . 6 5	1 . 2 2	9 3 3 . 3 0 *

FIGURE 64

Often it is advisable to adopt one of these last two methods.



FIGURE 65

Machine showing detachable keyboard for subtraction which can be slipped on and off at will.

Subtraction

SUPPOSE it is desired to subtract 2342 from 32167. The 32167 is set in the machine and the handle pulled. The complement of 2342, which is 7658,

Some
Practical
Sug-
gestions

is set in the machine, and then by a simple keyboard process the subtraction is made. Then a total is taken. This total is the remainder and the whole process is shown in Figure 66.

FIGURE 66

It is easy to pick out the complements of numbers by use of the complement keyboard reproduced in Figure 65.

It is made of bristol board, or celluloid, and the columns with the exception of the first, which is numbered from 1 to 9 inclusive, are numbered from 0 to 8 in reverse order to the regular keys.

This keyboard is cut so that it can be slipped below the regular keys and can be placed on the machine or taken off at will. When an amount is to be subtracted the operator looks beyond the regular numerals to those on the complement keyboard below and depresses the keys nearest the respective complement numerals. The "9" keys to the left of the amount are then depressed and the subtraction made in the usual manner. The complement keyboard simply enables the operator to pick out the complements quickly without the necessity of calculating them mentally.

With a little practice in the use of this keyboard subtraction can be done very rapidly.

3 2 1 . 6 7	*
9 , 9 9 9 , 9 7 6 . 5 8	
2 9 8 . 2 5 *	

Division

DIVISION is a short way of subtracting and when done on the Burroughs involves the same principle as subtraction, namely, the use of complements.

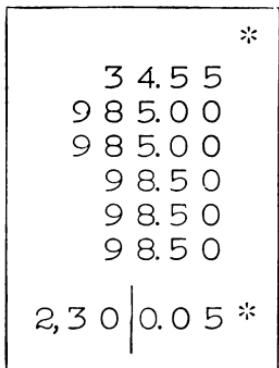


FIGURE 67

When 3455 is divided by 15, the quotient shows how many times 15 can be subtracted from 3455. It is found to be 230 times with 5 left over.

Figure 67 shows how the process looks when worked out on the machine. The amount to the left of the vertical line is the quotient, while the remainder is shown to the right.

If this chapter interests you, you will want our booklet devoted to "Multiplication, Subtraction and Division." These three processes are there discussed and described in detail. A request brings it to you—and there's no charge or obligation. A demonstration of the machine's application to all kinds of figure-handling work will be made in your office, without cost or obligation to you.

CHAPTER XXXVI.

Some Simple Rules for Locating Errors
in Trial Balances

"If the adding machines keep on increasing in number for the next 25 years, as they have in the past 10, we'll lose our ability to compute," says the melancholy prophet. "Why, they are putting them in meat markets, grocery stores and I saw one in a news-stand only yesterday." "Don't worry," said the cheerful one, "the Chinese have had an adding machine for 2000 years—and they know a few things about computation. If you don't think they do, ask a San Francisco bank clerk."

THE prevention of errors being much more important to the bookkeeper than their detection when made, the advantage of a daily proof of all postings, both debit and credit, cannot be too strongly urged. If credit postings have been checked daily against the cashier's cash, and debit postings against the recapitulation of the sales books, at the end of the month the bookkeeper has only one day's work to prove, instead of the work for the whole month. (See Burroughs Cash Received, page 63 and Proof of Posting System, page 71.)

Preven-
tion
Easier
than
Detec-
tion

The following suggestions for locating errors in case such a daily check has *not* been maintained, are adaptable.*

It should, however, be remembered that a little care in posting and the daily proof made possible by the use of the Burroughs, will save many hours of overtime spent in locating errors in the trial balance.

Look carefully through the trial balance to see if a General balance has been omitted, or has been entered on the wrong side. Rules

Do not look through your postings to see if you can find the amount of the error unposted, unless you think you are familiar with such an amount. The required difference is generally made up of two or more errors.

*"Business Short Cuts"—Book-Keeper Publishing Company, Detroit, Mich., U. S. A.

Some Practical Suggestions If transpositions do not apply, look through the ledger for a balance omitted from the trial balance.

Look for an account closed, but not ruled off, so that last month's balance has been taken again this month.

If the difference is an even number, it may be a debit posted as a credit, or a credit posted as a debit.

If the difference is 1 cent, or 10 cents, or \$1.00, the error is almost certain to be in addition or subtraction in drawing off the balances.

Check the footings of the trial balance, and the carrying of the totals to the recapitulation sheet.

Scan the folio columns of all books of original entry to see if any posting has been omitted.

See that you have not forgotten to include in the trial balance the balance of cash account.

Look for some small account ruled off during the month to show a balance, but no balance brought down.

Carefully check over your sundry accounts receivable, and notes receivable accounts, as these two accounts are prolific sources of error.

If all these efforts to locate the difference are fruitless, check the additions of the ledger accounts, and the drawing off of the balances.

Another Way to Check up Proceed to check the postings as follows: On a sheet of paper take off from the ledger the credit postings of cash, using a separate column for each week. Foot the up columns, ascertain the grand total, and compare it with the total called for by the cash book.

If the totals do not agree, compare the totals by weeks in order to locate the difference.

If the totals agree, draw off the debit cash postings in like manner.

Also the journal debit postings and credit postings.

If these all agree, draw off the postings to the ledger from the sales book, and compare total with total of sales book.

It is supposed that the cash book and journal are self-proving so far as footings are concerned, but if the totals of postings from the sales book and the total of the sales book footings differ, the footings must be checked.

If a purchase book, or any other auxiliary record is kept, treat it in the same manner.

During the above checking process the error or errors must inevitably be located, and it is quicker and surer than checking individual postings, especially if the postings are "called off" to the bookkeeper. Moreover, the error may be located in the cash book, or whichever book may be checked first, which will obviate the labor of checking anything else.

It is somewhat surprising to learn that a list can be made of no less than 504 transpositions of two and three figures, besides possibilities of double and indirect transpositions which appear to be almost unlimited.

A difference divisible by 9 infers a transposition. That such a difference does not necessarily indicate this class of error may be illustrated by the example of posting \$10.90 as \$10, being an omission of 90c. In this case the bookkeeper would probably waste considerable time looking for \$1 posted as 10c, \$5.40 as \$4.50, etc. In some cases, then, it is possible to distinguish transpositions from omissions.

To find what figures, being transposed, caused the error:

Rule—Divide the error by 9 and the quotient is equal to the left hand digit, less the right hand digit, of the transposed amount.

Example: Error \$54.00 over; divided by 9=6; now 71, 82 or 93 are the only numbers of two figures where the left hand digit exceeds the right hand digit by 6. If the error is over, look for 17, 28 or 39 posted as 71, 82, or 93; if the error is under look for 71, 82, or 93 posted as 17, 28, or 39.

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Practical
Sug-
gestions

Detect
Trans-
positions

Some Practical Suggestions To detect an error resulting from the transposition of three figures:

Rule—If the error is the result of transposition of three figures, the middle digit of the error will always be 9, and the two outside digits will always amount to 9.

Example: 125 transposed is 521, the resulting error being 396.

To find the amount, where the error has resulted from transposition of three figures:

Rule—Disregarding the middle digit of the error, place the two outside digits together and divide by 9; the quotient will be the amount by which the left hand digit of the transposed figure exceeds the right hand digit.

Example: Error 396. Now $36 \div 9 = 4$. Look for a number having three digits in which the left hand digit exceeds the right hand digit by 4, as for instance, 521, 642, or 753, transposed from 125, 246, 357.

Trans- place- ment of Figures, or "Slides" To find whether an error is the result of displacement, or posting in the wrong column:

Rule—If all the digits of the error, when added together, make 9 or a multiple of 9, it is almost certain that the error is the result of posting dollars in the cents column or vice versa, units in the tens column, etc.

Example: Error \$70.29; digits added together equal 18, a multiple of 9.

Single "Slides" To find the amount where the error results from posting cents in the tens of cents column, or dollars in tens of dollars column, etc.:

Rule—Divide the error by 9, and the quotient will be the amount in cents, or dollars and cents, posted in the wrong column.

Examples:

Error \$54.00 over; divided by 9 = \$6; look for \$6 posted in error as \$60.00.

Error \$54.00 under; divided by 9 = \$6; look for \$60 posted as \$6.

Double "Slides" To find the amount where the error results from posting dollars in the cents column, or vice versa:

RULE 1—Subtract the cents of the error from imaginary ciphers and the remainder will be the dollars posted in the wrong column.

Some
Practical
Sug-
gestions

Examples:

Error \$70.29 under;

Deduct from ciphers	\$. . 00
the cents of the error	70. 29
Therefore	\$71. 00

has been posted 71 cents.

Error 80.19 over:

Deduct from ciphers	\$. . 00
the cents of the error	80. 19
Therefore . . . . .	. 81

has been posted \$81.00.

The error may also be located as follows:

RULE 2—Divide the amount of the difference by 9 and the quotient of that division by 11. The result will be the amount posted in the wrong column.

Examples:

Error \$43.56 under; divided by 9 = \$4.84; $\$4.84 \div 11 = .44$. Look for \$44.00 posted as \$0.44.

Error \$5.94 over; divided by 9 = \$0.66; $\$0.66 \div 11 = .06$. Look for \$0.06 posted as \$6.00.

On columnar cash books and journals look for amounts which should have been entered in special non-posting columns, but which have been entered in a ledger column and not posted.

Rules
for
Locating
Errors

On Safeguard ledger look for balances which have been transferred without a journal entry.

Where ledgers are separated into sales, purchase, and general ledgers, look for sales which have been posted to accounts in the purchase or general ledgers.

Where the Goldman check figure is used look for double slides as previously described.

Also look for transpositions like the following: \$425 posted as \$524.

Last, but not least. Remember that a little care in posting will balance ten nights' work put in to find the error.



Largest Adding Machine Factory in the World

Interesting Facts About the Burroughs Adding Machine Company

1. Over 2000 Employees.
 2. More than 300 Salesmen.
 3. 300 Employes abroad.
 4. The following countries are covered by resident representatives:—England, Scotland, Germany, France, Italy, Australia, Belgium, Norway, Canada.
 5. Over $5\frac{1}{2}$ acres of floor space required for manufacture of the machines and administration of the business; this is more than two city blocks.
 6. Over 2000 adding and listing machines manufactured every month.
- Boyer Machine Shop, St. Louis
—1888-1904;
St. Louis Plant—1904-1908;
Detroit Plant—1908-

Section III

Burroughs Service

To so make and market a machine that shall at all times and under all circumstances give the user uninterrupted use of his investment—that is our idea of Service, and what we are organized to insure to every purchaser.



Scenes in the Department of Business Systems
Showing Correspondence and Records Section—Library of Forms—Lecture Hall in
which Salesmen are Instructed in the Latest and Best Methods
of Applying the Burroughs

CHAPTER XXXVII.

System Suggestion Service

"Dost thou love life? Then do not squander time; for that's the stuff life is made of."—Ben Franklin.

THE business systems department does not pretend to "put in a system," or to show you how to run your business. What it has to offer is experience—the experience of other progressive concerns which have worked out the application of the Burroughs machines to their systems, and found that they saved them money. This department does not offer a service that interferes in any way with the work of expert accountants, auditors, or systematizers, but freely gives its assistance in helping you to determine, through the uses to which the Burroughs has been put by others, its probable value as a time, work, and worry saver to you.

Somewhere, there is a concern in your own line, which has devised a better way of handling some detail peculiar to your business, a short-cut to save time and money, a safeguard to insure accuracy in handling your accounts. Our business systems department has collected these ideas, reduced them to their simplest form, reproduced them on large bond sheets in exact facsimile, showing headings, rulings, every detail of their use—and on the back of each form is a complete explanation plainly written by those who thoroughly understand the application of our machines, in terms your bookkeeper will understand.

This collection of Burroughs systems forms is standard as wheat. Each form bears the O. K. of practical use in representative business institutions which have tried it out and proved its value. These forms are adopted by commercial schools and expert systems men, as representing the highest development of modern accounting

You
Benefit
By Our
Experi-
ence

Clearing
House
of
System
Short-
Cuts

Systems
Have
Made
Good in
Use

Bur-roughs Service experience, and they command the admiration and respect of bookkeepers and well-informed executives everywhere.

The business systems department is directed by practical men, and its work is thoroughly practical in every respect. It aims to take into account all the peculiarities and special conditions of your business.

The Burroughs man does not claim to know all about your business. He does know a good deal about the way in which other concerns in your line use the Burroughs—and he has undergone a somewhat thorough course in applications, at the Burroughs Salesmen's Training School. What he has to say about the possible time-saving in your office, should entitle him to your attention.

Remember, he is not coming to give you an argument about the Burroughs alone, but to explain its relation to your business, and give you an opportunity to determine for yourself how it will save you time and money.

Trial Costs Nothing

When you have looked into the matter, you may wish to try the machine and the short-cut ideas in the actual work of your office, store, or factory. Such a trial will cost you nothing.

The business systems department carries on a large part of its work by mail, with correspondents in all parts of the world, who write for and give suggestions as to the use of the Burroughs in various lines of business.

Systems Men Are Experienced

The men in this department are studying specific lines of business, to know exactly how the Burroughs may be used to advantage. All of them are men of business discretion—men upon whose judgments and recommendations you may rely.

If you address an inquiry to the department it will be promptly and carefully answered, with the best information at our command. Forms illustrating the work outlined will be sent whenever possible.

A B E T T E R D A Y 'S W O R K

There is no charge for this service, it places you under Burroughs no obligation. The department is only too glad to show Service any business man how he may find a profitable use for the Burroughs.

Specific systems are too highly specialized to be mentioned here, but we invite you to address a request direct to the department, where it will receive careful attention, and any suggestions the department can offer. No matter what you want to do, so long as it is a matter of figures, there is a Burroughs machine and a Burroughs way to do it.

The first thing you have a right to expect from an adding machine is that it will save time in handling your business. This company stands alone in maintaining a regularly organized department where you can get such practical help.

We
Stand
Alone



The Burroughs Electric Adding and Listing Machine

Comprising 71 different and distinct styles of Burroughs Adding and Listing Machines, from six to fifteen columns, capable of nearly 300 variations and combinations for special lines of business.

50 Per Cent Easier **S**WIFT, silent and 50 per cent easier to operate than the easiest hand-operated machine.

The only adding machine instantly changeable from electric to hand operation, and vice versa.

Equipped to operate on any lighting or power circuit, as specified, and from any lamp socket.

Costs but little more to operate than an ordinary 16-candle-power lamp.

We furnish a two-way plug, so that both the light bulb and the machine can be operated from one socket.

CHAPTER XXXVIII.

Seventy-one Different Styles of Burroughs for Adding and Listing and Book- keeping Purposes

OUT of the modern demand for the Burroughs machine, and the manifold uses of which it is capable, have been evolved 71 different and distinct styles of Burroughs Adding and Listing and Bookkeeping Machines. These, in turn, are capable of nearly 300 variations and combinations—literally, a machine for every line of business.

Most of these machines have special features in addition to their primary function of merely listing and adding figures. Special Features

There is a Burroughs especially for the small retail establishment as well as the department store, for the wholesale house—different machines for different lines; for the railroad; for insurance companies; brokerage offices; grain elevators—pounds and bushels; lumber concerns—feet and inches; tanneries—dimensions and number of hides; cotton concerns—weights and bale numbers; mail-order houses; clothing manufacturers; public service corporations; packing houses—in fact, a machine for practically every important branch of commercial and industrial activity.

Each one of these different styles of Burroughs is built on the familiar Burroughs model, which has been greatly improved but never changed in any essential feature since the first one was marketed in 1892. The points of difference between the various styles consist chiefly in variations of the printing carriages and keyboard arrangements, with various methods of "splitting" which permits the listing and adding of two or more columns of dates, numbers, weights, amounts, etc., at the same time, in addition to printing all manner of trade symbols, abbreviations, initials, etc., in connection with amounts. Original Burroughs' Features

Full descriptions of the various machines you'll find in our "Book of the Burroughs."

A B E T T E R D A Y ' S W O R K

DEBITS AND CREDITS IN ONE COLUMN	DEBITS AND CREDITS IN TWO COLUMNS	RECAPITULATION OF SALES BY CLERKS
\$	\$	\$
1 2.45	2 3.55	1 *
3.34	1 2.35	
4.55	4.50 ±	
3 2.45	2 3.45	2.65
6.56 ±	5.00	4.50
1 0.00 ±	7.50	1 3.24
2 3.50	5.00 ±	7.65
3 4.55	1 0.00 ±	6.00
4 2.45	1 2.50	1 4.24
1 4.50	4.50	3.55
5.00 ±	7.50	6.40
2 3.50	5.00 ±	2.35
1 2.50 ±	5.00	6 0.58 ±
2 2.50	1 2.50 ±	
7.50	5.00	2 *
1 3.50	1 2.50	
2 5.00 ±	8.76	1 2.3
5.00 ±	1 2.30	
1 3.60	7.50 ±	2.45
6.50 ±	5.50	7.55
1 0.50	5.00 ±	4.67
2 2.50	1 1.00 ±	1 0.00
8.56	7.50	5.00
4.68	2 2.65	6.50
1 3.45 ±	5.00 ±	1 2.23
7.65	1 2.55	
6.77	7.50	4 9.83 ±
1 3.45	6.50 ±	
2 2.35	5.50	3 *
7.50 ±	4.45	
1 0.00 ±	7.70 ±	1 2.30
2 2.50	3.50	5.45
6.50	6.00	5.00
1 4.50	1 2.50	3.45
7.00 ±	2 3.50	1.23
9.00 ±	1 2.50 ±	.45
1 4.50	1 2.30	.60
7.45	3.50	
3.00	5.00	2 8.48 ±
4 1 3.30 ±	7.78 ±	
1 1 7.51 ±	1 2.50	4 *
	2 84.36 ± 109.98 ±	
		1.02
		3.23
		2.55
		6.00
		5.35
		1 0.00
		1 0.00
		2.34
		3.45
		4 3.94 ±
		1 82.63 ±

FIGURE 68
Example of work done on a Burroughs Duplex Machine

The upper counter clearing signal is a star with a bar above it (—), and the lower counter clearing signal is a star with a bar below it (*). The "transferred totals" are indicated by the symbol (—).

The Duplex Machine

The Burroughs Duplex Adding Machine is literally Two Machines In One a double adder. It has two sets of accumulators, that can be worked independently, or in conjunction with each other.

With the duplex feature a machine of say, \$9,999,999.99 normal capacity can add and list two columns of amounts, each of which has a maximum capacity of \$9,999,999.99. This is done by accumulating the total of one set of amounts in one of the accumulators, and the other set in the other accumulator. Either accumulator is thrown into operation by shifting a lever into lower or upper position.



The first and second groups of items, as shown in Figure 68, show simultaneous additions of debits and credits. In these cases the accumulators are acting independently of each other.

In the first group the items are added and listed in the same column. The debits are added with the upper

Bur-roughs Service accumulator, and the credits with the lower. The latter are indicated by the symbol (⊖) which is printed automatically.

After the last item has been listed, the total of the debits is taken, first by setting the duplex control lever in the upper position and taking a total, and then setting it in lower position and taking a total. In this way both accumulators are cleared, and their respective totals printed on the sheet.

Debits and Credits The second group of items is practically the same as the first, with the exception that the debits are printed in one column, and the credits in another. This is accomplished by shifting the carriage over whenever a credit is to be added and listed. The totals are taken in the same way as in the first case.

Sales Recapitulation Another illustration of the application of the duplex is shown in the third group of items. This represents a recapitulation of sales by clerks, showing the total for each clerk, and the grand total for all clerks.

Transferring Totals In this case the accumulators act in conjunction with each other, the sales of each clerk being added in the upper accumulator. Then the total of sales is cleared from this accumulator, printed on the paper and transferred to the lower one. This is done by pressing the transfer total key when the total is taken.

By this operation the upper accumulator adds each clerk's sales and transfers the total to the lower accumulator at the time it is printed.

In this way it is cleared for action each time a clerk's total sales is printed. The lower accumulator takes up these totals, and retains them until the operator is ready to print the grand total of all the sales, which is done by setting the duplex control lever in the lower position and taking the total.

Duplex Does All a Regular Machine —and More These three groups of items illustrate the principle of the Duplex Machine, and give an idea of its possibilities. Besides handling this double-total work so efficiently, the machine can also be used for straight adding and listing, and by using either accumulator continually, as in a regular machine.

Split and Normal Device as Used on the Burroughs Split and Normal Machines

Imagine a bookkeeper endowed with two working sets of brains and twice the usual complement of hands—and you have the “Split & Normal” Burroughs as compared with the ordinary machine.

Where the regular machine lists and adds a column of figures three to six times as fast as a man can do it, the “S & N” lists and adds two or three, or even four columns, all at the same operation, and with no more time or effort than it takes for one.

The “S & N” device may be applied to any of the 9, 11, 13 or 15-column Burroughs machines, and is capable of infinite variations to suit any possible requirement.

9	9	9	9	1	9	9	9	9
No Total		Add						
9	9	9	9	1	9	9	9	9
Add		Add						
9	9	9	9	9	9	9	9	9



The only visible feature of the “S & N” is this indicator, mounted on the lower edge of the keyboard.

When set at “Normal” the machine does the work of a regular machine, in the case of a 9 column machine, with a listing and totaling capacity of 9,999,999.99.

When set at “Split 1” it lists and adds two separate columns at the same time—five figures in the right-hand section, four figures in the left.

When set at “Split 2” it lists and adds a column of five figures at the right, while it merely *lists* a column of four figures at the left, without adding them. This arrangement provides for printing dates, folio numbers—or any other figures which are not to be added—in connection with amounts.

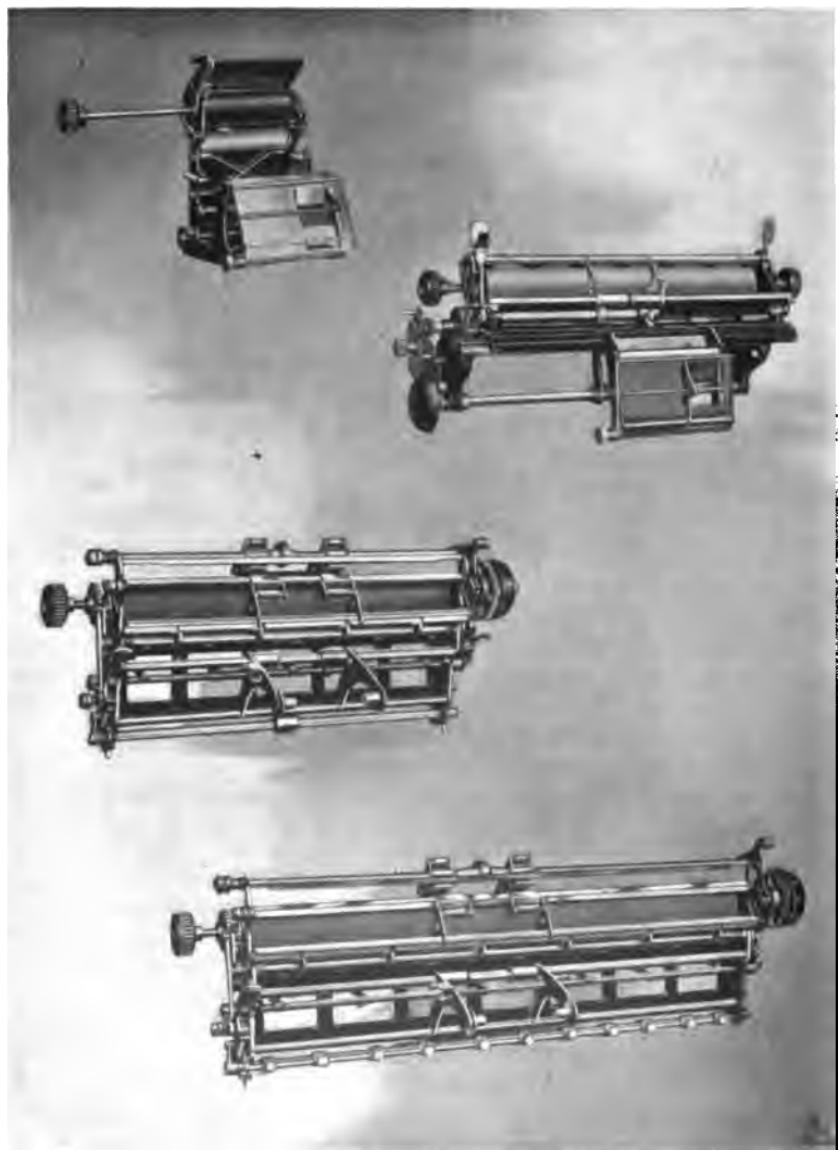
This describes but one of the infinite variations of the “S & N.” The split may be located between any two columns, at the desire of the purchaser, or it may be arranged on the “Variable” principle which enables the operator to shift the “split” to any point at will, by merely moving a small indicator lever.

Samples of this work on application.

Book-
keeper
With
Two
Heads

Only
Visible
Feature

The
“Split”
is the
Key-
note



Carriages on Burroughs Adding and Listing Machines

There are four sizes of carriages which are regularly 4 Sizes used on Burroughs Machines, and these are illustrated on the opposite page.

The Burroughs carriage has developed with the machine.

When the machine was used simply for adding and listing, a small carriage for a narrow strip of paper was ^{Narrow Carriage} sufficient.

But when it was found advantageous to use wide sheets of paper, we began experimenting with wider carriages, until our splendid line of automatic, semi-automatic and shuttle carriages has now been developed and perfected.

Even though the carriage has no direct part in the adding function of the machine, it does its work with a precision thoroughly in keeping with the positive accuracy of the machine.

No one feature of the Burroughs has done more to widen its scope of usefulness than the paper carriage. It has not been enough that we have a device for holding a sheet of paper while it received the figures, but we required a carriage into which we could put a sheet quickly; square it up to the printing point; to cross-tabulate or print vertically. Some of our carriages have stops which enable us to secure any distance between columns. Some have an automatic lock which compels an even heading for any number of columns.

Importance of Carriage

Burroughs Points

Our inventors are constantly busy developing, improving and perfecting new types of carriages, because we realize that as the machine itself improves, the carriage must also improve, if the best results are to be obtained.

A Bur- No matter what width of paper you wish' to use, or
roughs Machine what type of work you want done, there is a Burroughs
Machine For carriage and a Burroughs Machine that will do the work
For You satisfactorily.

We'll gladly send full details about the right machine and the right carriage to handle your kind of work, if you will send us your requirements.

This is simply a part of "Burroughs Service." In asking for it, please understand that you do not obligate yourself in any way.

The Burroughs Long Line

THE Burroughs is essentially an adding and listing machine; but as wider fields for its usefulness have been developed, it has been found so well adapted to do so many different things in accounting work, that it has well earned the name—"Burroughs Bookkeeping Machine." A machine which will turn out comprehensive, detailed reports, summaries, and statements, a few of which are illustrated in this book, is assuredly more than an adding and listing machine. A few of the different machines are illustrated on the following pages.

Bur-
roughs
Book-
keeping
Machine

Following is a partial list, showing 71 down-to-date models:—

REGULAR MACHINES.

- 1—Style No. 6 with six columns of keys and tape paper carriage.
- 2—Style No. 6 with six columns of keys and 10 $\frac{1}{4}$ inch carriage.
- 3—Style No. 6 with six columns of keys and 12 $\frac{1}{4}$ -inch carriage.
- 4—Style No. 6 with six columns of keys and 18-inch carriage.
- 5—Style No. 6 with five columns of keys and $\frac{1}{4}$ or $\frac{1}{8}$ fractions.
- 6—Style No. 7 with seven columns of keys and tape paper carriage.
- 7—Style No. 7 with seven columns of keys and 10 $\frac{1}{4}$ -inch carriage.
- 8—Style No. 7 with seven columns of keys and 12 $\frac{1}{4}$ -inch carriage.
- 9—Style No. 7 with seven columns of keys and 18-inch carriage.
- 10—Style No. 7 with seven columns of keys and split-and-normal device.
- 11—Style No. 7 with seven columns of keys and automatic counter.
- 12—Style No. 9 with nine columns of keys and tape paper carriage.
- 13—Style No. 9 with nine columns of keys and 10 $\frac{1}{4}$ -inch carriage.
- 14—Style No. 9 with nine columns of keys and 12 $\frac{1}{4}$ -inch carriage.
- 15—Style No. 9 with nine columns of keys and 18-inch carriage.
- 16—Style No. 9 with nine columns of keys and split-and-normal device.
- 17—Style No. 9 with nine columns of keys and date, count and normal device.
- 18—Style No. 9 with nine columns of keys and variable split device.
- 19—Style No. 9 with nine columns of keys. Statement.
- 20—Style No. 11 with eleven columns of keys and tape paper carriage.
- 21—Style No. 11 with eleven columns of keys and 10 $\frac{1}{4}$ -inch carriage.
- 22—Style No. 11 with eleven columns of keys and 12 $\frac{1}{4}$ -inch carriage.
- 23—Style No. 11 with eleven columns of keys and 18-inch carriage.
- 24—Style No. 11 with eleven columns of keys and split-and-normal device.
- 25—Style No. 11 with eleven columns of keys and date, count and normal device.

- 26—Style No. 11 with eleven columns of keys. Statement.
- 27—Style No. 11 with eleven columns of keys and variable split device.
- 28—Style No. 13 with thirteen columns of keys and 10 $\frac{1}{4}$ -inch carriage.
- 29—Style No. 13 with thirteen columns of keys and 12 $\frac{1}{4}$ -inch carriage.
- 30—Style No. 13 with thirteen columns of keys and 18-inch carriage.
- 31—Style No. 13 with thirteen columns of keys and split-and-normal device.
- 32—Style No. 13 with thirteen columns of keys and date, count and normal device.
- 33—Style No. 13 with thirteen columns of keys and variable split device.
- 34—Style No. 13 with thirteen columns of keys. Statement.
- 35—Style No. 15 with fifteen columns of keys and 10 $\frac{1}{4}$ -inch carriage.
- 36—Style No. 15 with fifteen columns of keys and 12 $\frac{1}{4}$ -inch carriage.
- 37—Style No. 15 with fifteen columns of keys and 18-inch carriage.
- 38—Style No. 15 with fifteen columns of keys and split-and-normal device.
- 39—Style No. 15 with fifteen columns of keys and date, count and normal device.
- 40—Style No. 15 with fifteen columns of keys and variable split device.
- 41—Style No. 15 with fifteen columns of keys. Statement.

SPECIAL MACHINES.

- 42—Hour and Minute Machine.
- 43—Foot and Inch Machine.
- 44—Quarter Fractional Machine.
- 45—Eighth Fractional Machine.
- 46—Sixteenth Fractional Machine.
- 47—Double-Twelfth Fractional Machine.
- 48—Combination Twelfth and Eighth Fractional Machine.
- 49—Combination Twelfth and Quarter Fractional Machine.
- 50—Double-Sixteenth Fractional Machine.
- 51—Pounds and Ounces Machine.
- 52—Tons and Hundredweights Machine.
- 53—9-Check Figure Machine.
- 54—11-Check Figure Machine.
- 55—13-Check Figure Machine.
- 56—English Money Machine.
- 57—Department Store Auditing Machine.
- 58—No. 15 Government Money Order Machine.
- 59—No. 15 Government Wide Carriage Machine.
- 60—No. 17 Government Special Machine.
- 61—Leather Manufacturers' Machine.
- 62—Insurance Machine.
- 63—Railroad Machine.
- 64—Cost Keeping Machine.
- 65—Bank Transit Department Machine.
- 66—Double Repeat Key Machine.
- 67—Automatic Keyboard Lock Machine.
- 68—Shuttle Carriage Machine.
- 69—Semi-Automatic Cross Tabulating Carriage Machine.
- 70—Automatic Cross Tabulating Carriage Machine.
- 71—Duplex Machine.

The Smallest and Largest Burroughs



THIS is our 6-X machine. It has six columns of keys with a totaling capacity of 999,999. It has only a few of the later devices and we do not make any changes in its construction. It is intended for use in smaller stores or departments where simply an adding and listing machine is needed. The carriage is wide enough only for paper $2\frac{3}{4}$ inches wide and the sides of the machine are metal.

Contrast this machine with the big transit machine below.

This one is our smallest. The one in our next cut is one of our largest. There are many sizes in between.

Burroughs Transit Machine

THIS is our fifteen bank transit machine with a totaling capacity of 999,999,999,999. This machine is used in large banks in making up transit letters. It is usually furnished with permanent "splits" as indicated in the illustration, so that three columns of figures may be listed simultaneously. This machine may be operated by hand or electricity as preferred, and the carriage will accommodate any size of paper from the narrowest strip up to a sheet 18 inches wide.

A certain bank in Chicago uses 15 of these machines. With their assistance all the Transit Department details are handled with a saving of about one-half the office force required before the machines were installed.



Wide Carriage Tabulating Machine



Burroughs No. 9-B
Operated by Hand or Electricity

NO. 9 is the standard Burroughs machine; it has a listing and totaling capacity of 9,999, 999.99. It is the most useful, all-around style for general purposes.

The No. 9 may be equipped with any of the various special devices for handling special kinds of work—such as the automatic check figure, item counter, cross-tabulating carriage, roll holder for statement headings, etc. The illustration shows it equipped with a special wide printing carriage for sheets up to 18 inches. This is intended especially for tabular and statistical work. When intended only for straight listing, the machine may be furnished with the narrow carriage for roll paper only.

Retail Store Machine

USED in retail stores, small banks, and for all purposes where the amounts to be added are small. Has a listing and totaling capacity of 99,999.99. Aside from this limitation, it has all the improvements and desirable features of the larger machines.

The illustration shows the machine with a regular, positive-feed printing carriage for paper up to $12\frac{1}{4}$ inches wide. This carriage has all the desirable features of a high-grade typewriter carriage, and exactly matches standard typewriter spacings. It also takes two widths of roll paper. Can be furnished with friction feed carriage for $10\frac{1}{4}$ inch paper if desired or, if very wide sheets are used, it can be equipped with an 18-inch carriage.



Burroughs No. 7
Operated by Hand or Electricity

Eighth Fractional Cloth Manufacturer's Machine



Burroughs No. 9
Operated by Hand or Electricity

A WONDERFUL machine which lists whole numbers and fractions having three different denominators, automatically reducing the fractions to their lowest common denominator and adding them into the whole numbers.

It is just as easy to add fractional amounts with this machine as it is to add whole numbers. The fraction keys operate like the others.

May also be used for ordinary adding and listing, as the fractional column does not operate unless the keys therein are depressed.

There are many other fractional Burroughs for various lines, such as twelfth, sixteenth, tons-and-hundred-weights, etc.

Foot and Inch Machine

A DDS and lists feet and inches, automatically converting the inches into feet.

The feet are listed in the eight columns to the left, the inches in the double column at the right. This machine is used in the lumber trade and all lines of business dealing with measurements in feet and inches or items in twelfths.

This machine is operated on the same principle as the one above, the only difference in this case being that $\frac{1}{12}$ th fractions can be added and listed instead of $\frac{1}{8}$ th fractions.

When used for straight adding and listing, the machine has a capacity of 99,999,999, without punctuation for dollars and cents.



Burroughs No. 9
Operated by Hand or Electricity

Statement Machine



Burroughs No. 11
Operated by Hand or Electricity

ONE of the most useful of all the Burroughs machines. It prints statements from an endless roll of printed or lithographed headings. The name of the month and day is printed in the first column, credit items in the second, and debits in the third—all at one pull of the handle. Such abbreviations as "Dr.," "Cr.," "Bal.," etc., are also printed where desired.

Arranged with the regular "Split and Normal" device, this machine has endless uses, being capable of all the work of a regular machine, in addition to its special statement features. Capacity, at "Normal," 999,999.99; at "Split 1," two separate columns adding; at "Split 2," two separate columns, the left-hand column printing without adding.

Statement machines are built also in the No. 13 and 15 styles.

Department Store Machine

FOR designating clerks or departments in connection with sales.

Has the listing and totaling capacity of a regular No. 9, with the addition of the two columns of letters at the right.

This machine is a great convenience in making up a sales recapitulation, showing sales by clerks or departments. When used for ordinary work the letters are not printed, and it has all the features of a regular No. 9 except the punctuation for dollars and cents.

May be equipped with an 18-inch printing carriage for tabulating sales in a large number of columns across the sheet.



Burroughs No. 11
Operated by Hand or Electricity

Statistical and Bookkeeping Machine



Burroughs No. 13-B
Operated by Hand or Electricity

USED principally for tabulation of statistical matter and for all work involving unusually large amounts. Has a capacity of 99,999,999,999.99, which in the machine illustrated, is available for sums running into billions.

This machine may be "split" in any desired manner for special work. When split into two columns, one may have a capacity of 999,999, and the other 9,999, 999. On the "split" may be made "variable" to divide the machine into three or more columns, at the will of the operator.

The No. 13 is regularly equipped with a 12½-inch printing carriage. In the illustration it is shown with a special 18-inch carriage for sheets of the largest size.

Pay-Roll and Cost-Keeping Machine

ARANGED to print and add hours and quarters of hours in the left-hand section and amounts of money in the right-hand section, with one pull of the handle. In this way a piece or time pay-roll may be drawn up to show the time and earnings of each employee, with the grand total of hours in one column and the dollars and cents in the other.

This machine may be arranged, also, to convert minutes into hours in the center section, instead of quarter-hours as shown.



Burroughs No. 15
Operated by Hand or Electricity



Some Interesting Literature for You

Even in a book the size of this—"A Better Day's Work"—there is not space enough to tell you all about the Burroughs Adding and Listing Machines. With our 71 different styles of machines, it is next to an impossibility to make one catalogue giving details of the entire line. So in several booklets and folders we have treated different machines and different uses and have explained them in detail.

Can't
Tell
Entire
Story in
This
Book

Below we give you a partial list of our more representative booklets and folders. Any of them will be gladly sent you upon request:—

1. *Book of the Burroughs*

A book of over 100 pages, being our nearest approach to a complete catalogue. A rather interesting story of commercial development.

2. *A Better Cash Received System*

A 16 page booklet with illustrations explaining a system for handling incoming cash in the simplest and most efficient way.

3. *Cost Keeping Short-Cuts*

One hundred twenty-eight page booklet explaining, with illustrations, how costs can be obtained rapidly, correctly and at less expense with the Burroughs.

4. *Why Don't You Go Home?*

Forty-eight page book explaining and illustrating many time-saving Burroughs systems for the smaller retailer.

5. *Trial Balance Insurance*

An interesting booklet explaining how to secure your trial balance most quickly and economically.



6. *The Burroughs for the Wholesaler—*

A full set of forms, explaining in detail a helpful and complete mechanical system for the wholesaler.

7. *Burroughs, Master Enthusiast—*

A very readable narrative, relating in an interesting way the story of William Seward Burroughs and his invention.

8. *\$300,000.00 A Year—*

A small booklet with a story tersely told, giving facts about our expenditure of \$300,000.00 a year to show what Burroughs Service means to our users.

9. *Joke of the Just-As-Good—*

A little book which gives real facts about adding machines which claim to be "just-as-good as the Burroughs."

10. *Give Him An Interview—*

A few reasons why you will be interested in what the Burroughs man has to say.

Besides all of these and many more we have something over 50 folders (we call them our Long Line folders), each explaining a different style of adding machine.

So you see, we are ready to supply you with information about Burroughs Bookkeeping Machines. Whether yours be a giant corporation or a one-man general store, you can use a Burroughs to advantage.

The function of all this literature is to show you exactly *how*. Use the return card to get to the root of the thing.



When You Come to Detroit

Come Thousands of visitors yearly enjoy the scenic beauty of Detroit. and See Hundreds visit the Burroughs plant and express their wonderment at Us its magnitude, and remarkable equipment. If you, reader, would When in witness the highly interesting and instructive operation of a 2,000- Detroit man-power organization, when you are next in Detroit come out to Burroughs and Second Avenues, and see the inside of the home of the Burroughs, and be assured that you will be cordially welcomed.

You'll We will take pleasure in showing you just how the Burroughs can Be be made of value to you, in your particular business.

Welcome And, if you ask us to do so, we will demonstrate that a Burroughs, placed in your office, will save you time, money, and worry.

But we will not ask you to buy a Burroughs—we will not ask you to even rent one.

We may ask you to try one.

We know that if it saves We Won't sufficient time and money in Import- your business, you will be only You too glad to buy it—and we shall not expect you to buy it unless it does save time and money.

Let this trial be at our expense—express charges both ways paid at our end.

Anyway, whether you accept a Burroughs on trial or not, remember it will be always a pleasure to us to have you visit the Burroughs plant when you come to Detroit.



A Souvenir Book

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